MARCH 1959

VOLUME 99
NUMBER 3

American BEE Journal

Dedicated To The Progressive Future Of The Bee Industry

What! Apples in March? Yes, since the Swing is Pollination. The picture is from J. C. Allen, West Lafayette, Indiana. Not only do apples figure in pollination but so do over fifty other crops. As Pellett said "The honey bee is the spark plug of agriculture."

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S	M	T	W	T	F	S
1	2	3	4	5	6	7
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MAY - 1959

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31						

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Swing to Pollination

Surprised? Every so often readers want to know why more on pollination is not published. Even members of our staff say that pollination is getting the brush-off. Before the idea of the Swing was developed there seemed no way to give special and extended attention to any one phase of beekeeping but the Swing opens the way to avoid the accumulation of material in any department for lack of space for subjects outside the usual. The Swing may therefore "swing" in almost any direction through the year without side-stepping any of the usual departments.

Jordon Tatter presents orchard pollination from the viewpoint of an actual fruit grower and as a student at Michigan State University. A very good report we think. The trefoil story was one of those fortuitous ones that falls into one's lap. The Skolness boys were here only a few days before the pollination Swing was decided on; perhaps they decided it with their big trefoil seed venture. Then Dietz came along almost in the same period with his story of trefoil. Some of the repeats are the very best from past issues changed for the present. Anyway, maybe this Swing will stir up some beekeepers to try pollination. It's the big modern trend.

Ever wander about in a big orchard like this? We did in the Hillview orchards in Illinois — and got lost. Years ago I got the job of establishing 450 package colonies in new equipment in a two thousand acre block of apple varieties, then, the largest single block in the country, just for pollination. Previous crops for some apple varieties had been small because of poor pollination. But those bees really went to work and at the end of the season the orchards reported that the heavy crop increase would pay for the entire cost of the bees and equipment and leave a large profit in addition. —G.H.

Planned Pollination an Agricultural Practice

Roy Grout, of the Journal staff, prepared a booklet with this title, which has been widely distributed. Readers may secure a copy if they wish. Price 15c each. There are twenty six pages and many illustrations.

It is prefaced by a quotation from the Soil Conservation Service of the United States Department of Agriculture:

"Pollination of legume flowers is as essential to the production of a good seed crop as land preparation, cultivation, and favorable weather. Seed growers can do something about all of these—even the weather—through soil and water conservation practices. Planned pollination means arranging to have enough insects at hand to get a maximum set of seed when the crop will be in bloom. It pays! Sometimes yields are two, three, or even five times as great."

Set of fruit and seed is dependent upon pollination. Without pollination, yields of fruit and seed crops are impossible. Fertilization, and subsequent reproduction, only result after pollen is transferred from the stamens to the stigmas of the same flower, or to other flowers of the same species. The pollination of farm crops is accomplished by wind, as in the case of grain crops, and by insects, as in the case of the legumes, fruits, and many vegetable seed crops. Although pollination is necessary it should be stated clearly that it is only one of many factors involved in the production of crops.

Probably the reason why the need for adequate insect pollination is not realized more fully today is that there were at one time enough wild insects to accomplish the task. Upwards to fifty years ago, it was not uncommon for red clover to yield from 10 to 12 bushels of seed per acre, and alfalfa, 8 to 10 bushels. If a crop produced a good stand of flowers, a good set of seed would result when weather conditions were favorable. *This is not the case today.*

As agriculture developed and more land came under the plow, the nests of the wild pollinating insects were destroyed. Heavy grazing of land took a further toll, as did the elimination of rail fences and hedges. Planting of large areas to a single crop, forest and grass fires, and the automobile and paved roads added to their destruction. The final step was the widespread use of insecticides, which destroyed beneficial insects as well as those which were harmful, and the use of herbicides, which not only was harmful to wild pollinating insects, but destroyed their sources of food and their habitats. Practically every agricultural practice has contributed to the destruction of the wild pollinating insects.

With the decline of the wild insect population, more and more of the pollination task fell to the honey bee—the only insect which can be controlled by man and moved from one place to another for this purpose. Authorities estimate today that more than 80 percent of the pollination task required for set of fruit and seed crop is accomplished by honey bees. Jas. I. Hambleton reported that at least 50 agricultural crops are either dependent upon honey bees for their production, or yield more abundantly when bees are plentiful. These fruit and seed crops are tabulated as follows:

Seed Crops

Alfalfa	sweet, white
Asparagus	Kale
Beans	Kohlrabi
Broccoli	Muskmelon
Brussels sprouts	Onion
Buckwheat	Parsnip
Cabbage	Pepper
Carrot	Pumpkin
Celery	Radish
Cauliflower	Rape
Collards	Rutabaga
Cotton	Squash
Cucumber	Sunflower
Clovers—alsike, crimson, Ladino, strawberry,	Trefoil
	Turnip
	Vetches
	Watermelon

Fruit Crops

Almond	Huckleberry
Apple	Mango
Apricot	Nectarine
Avocado	Peach
Blackberry	Pear
Blueberry	Persimmon, native
Cherry	
Cranberry	Plum
Cucumber	Prune
Dewberry	Strawberry
Gooseberry	Tung
Grape	

In all probability, the most important group of plants requiring cross-pollination by insects are the legumes, which made possible the conservation of our soil and the maintenance of its fertility. Fertile lands result in increased yields of crops and livestock, and produce foods that are more nourishing to man and animals. The pollination of legumes makes possible our forage crops which are the backbone of our production of beef, pork, mutton, milk, butter, cheese, leather, and wool. *Pollination thus becomes the key to our agricultural economy—the basis for our national prosperity.*

Planned pollination may be defined as an agricultural practice in which adequate insect pollination is ensured by providing honey-bee colonies. *Chance pollination* is leaving the fields to be serviced only by wild pollinating insects and honey bees which may be in the area.

For additional information on planned pollination, the reader is referred to his state agricultural college or experiment station; to the apiary inspector or state apiarist; to the Division of Bee Culture, Beltsville, Maryland; and to the Bureau of Plant Industry, Soils and Agricultural Engineering or the Soil Conservation Service, U.S.D.A., Washington, D.C.

The bulletin discusses some of the problems in the pollination of alfalfa, red clover, alsike, white Dutch, sweet clover, ladino and crimson clovers, vetches, trefoil, field and greenhouse crops, fruit and nut crops, vegetable seed production. It proposes that planned pollination is a community problem and not just an individual problem.

Basic Beekeeping Information

First revision of Extension Folder F-165, from the Extension Service of Michigan State University, East Lansing, by E. C. Martin, Department of Entomology, is a folder of eight pages written to answer questions asked by people who wish to keep bees. Subtitles include Suggestions to New Beekeepers, Apiary Location, Management, Wintering, Preparing Honey, Pollination, Disease, Beekeeping Literature, Sources of Information, and Beekeeping Organizations.

Bee Pollination in the Orchard

by Jordan B. Tatter

Fruit Grower, Watervliet, Michigan, Student,
Michigan State University, East Lansing, Michigan

Which one is Tatter? Suppose he is on the seat. Anyway the picture was taken in his orchards.

The honey bee is nature's chief insect pollinating agent. Therefore it is the most useful insect known to mankind.

Pollination results in the fertilization of the blossom of a plant, resulting in the development of seeds and fruit. As ordinarily used among beekeepers, pollination refers to the transfer of pollen grains from the stamens of one flower to the pistils of another flower. These are the male and female reproductive organs of plants. Since many plants are self-sterile, it is necessary that pollen from other plants and sometimes from other varieties be brought to them to insure fruitage. The honey bee is the principal agent in the pollination of many of the edible fruits grown in our orchards.

Over fifty food crops are benefited by the presence of the honey bee during the period of fertilization. During the last fifty years it has become the rule rather than the exception to see colonies of honey bees located in the orchard during the blossom period. Orchardists who do not own bees of their own rent the hives for this short period.

It is of advantage to both the hive owner and the fruit grower to have the bees in the blossom area in the early spring, but the real necessity of honey bees as pollination agents is of such importance that the orchardist is willing, or required, to pay from $5.00 to $10.00 per hive to have the bees placed in the orchard proper by the beekeeper.

The wind, birds, and other insects are nature's means of transporting pollen, but the honey bee in its search for nectar is truly the most useful insect known to man.

Of all the insects which serve the fruit grower, none is more efficient than the honey bee. Furthermore, in one important respect, the honey bee becomes the most dependable of all. At the season when the fruit trees blossom, insects of the wild species may be scarce, having been decimated by severe winter conditions. While honey bees also suffer, sometimes severely from the winter, it is relatively easy not only to build up the colonies in the early spring but to bring in additional colonies as agents of pollination. It, therefore, is simple for the fruit grower to provide insects to pollinate the blossoms if the weather is suitable for bee flight during the blooming period. Progressive fruit growers in all parts of the country are becoming more conscious of this and many of them now keep bees solely for the benefits to the fruit crops during the period of bloom.

Without the assistance of the honey bees in the distribution of their pollen many flowers would perish, for they have no other agent to carry the life giving element from bloom to bloom and thus insure reproduction.

Bees do not injure fruit! Many fruitmen think that the honey bee will puncture the flesh of a solid fruit. This is not true. The mouth parts of the honey bee cannot possibly pierce the skin of any of our orchard fruits. Bees are sometimes seen sucking the juices of fruit which has been injured by some other animal, usually birds, or as a result of the fall from the tree. Bees finding the injured place will, of course, partake of the nectar thus presented to them.

Remember when buckets of the right pollen bloom were hung in trees so the bees would carry the pollen to the fruit bloom? Planting the right pollen varieties is the right practice now.

A leading American authority on apiculture has expressed the opinion that beekeeping adds much more to the resources of the country annually by flower pollination than by the sale of honey and wax; this is without a doubt a true statement. The honey bee is many times more valuable as a pollinizer than as a honey producer.

General Orchard Application

Some of the fruit crops affected by the honey bee in the U. S. are:

Almond	Mango
Apple	Muskmellon
Apricot	Nectarine
Avocado	Peach
Blackberry	Pear
Blueberry	Persimmon, native
Cherry	Plum & Prune
Cranberry	Raspberry
Cucumber	Strawberry
Dewberry	Tung
Gooseberry	Watermelon
Grape	
Huckleberry	

The apple growers learned many years ago the value of honey bees in effecting a good set of fruit. Apple pollen, like that of many plants, is sticky and heavy, and not transported by the wind. Since most commercial varieties of apples are self-sterile, the value of a reliable agent for transferring pollen from the blossoms of one variety to those of another is self evident.

The commercial varieties of the sweet cherry are virtually all self-sterile, and some of them are inter-sterile. Furthermore, the greater proportion of the blossoms must set fruit if a good crop is to be obtained. Pollinating agents, honey bees, are therefore essential for the production of sweet cherries. Sour cherries are said to be largely self-sterile. This is probably not always true, and even self-fertile varieties must be pollinated by bees or other insects if a commercial crop is to be secured. While peaches are largely self-fertile, insects are still necessary to trans-

fer the pollen from the stamens to the stigma of even the same flower.

Demand for pollination and the high prices prevailing for such services has led many an apiarist to rent his bees. As a result, many have discovered what the commercial pollinator has known for a long time, moving bees destroys "bee morale." The commercial pollination service recognizes that its service fee must include this morale damage. More new colonies must be started by those in the pollination business to keep their apiaries in sufficient strength than any other type of bee business.

Since orchard pollination is paid for on the basis of the number of colonies, it behooves the renter of bees to make certain that he is getting good populous colonies and not merely half-empty hives. Charges for the rental of bees usually run from $5.00 to $10.00 per colony for the blossoming period. Some beekeepers make a specialty of renting bees for pollination and have standardized their practice to the extent of furnishing only colonies having six or more frames of brood.

Some orchardists state that the use of honey bees for pollination causes too heavy a set of fruit, with a resulting costly thinning operation. In determining, therefore, the feasibility of renting bees, orchardists could well take into consideration the risk involved in not having bees, especially during the years when inclement weather reduces or limits the flight of all pollinating insects.

The bees that are working at the greatest distance from the hive are the first ones to curtail their flight in the event of bad weather. Those which have established the foraging areas near-by will continue working longer under otherwise unfavorable conditions for flight. When pollinating insects are plentiful and close to the trees, a few hours of good flying weather might well make the difference between a profitable crop or no crop at all. The orchardist, when considering moving bees into the planting, should be aware of neighboring apiaries and/or wild populations of honey bees in the surrounding area as they will influence the number of hives needed in the planting.

The economical distance for honey gathering is about zero to one and one-half miles, that is to say, unless they can secure their supplies within an average radius of about a mile, undue wear and tear and risk is involved in gathering and the returns will begin to suffer. The economical radius for pollen gathering is very much less. Bees will carry pollen long distances, but in placing hives in the orchard it is found necessary to furnish a hive per acre as a general rule to secure the most effective pollination.

Much has been written about the 22-year-old orchard of W. R. Roach, near Hart, Michigan. In 1927 the crop was 700 bushels and the largest crop ever gathered up to that time was 1600 bushels. Then bees were brought in. Two hundred colonies were brought into the orchard when the trees were in bloom and the resulting crop was 4000 bushels.

Curious investigators have enclosed fruit trees within cages which excluded the bees to see what happened. A Jonathan apple tree thus inclosed set fruit on less than one percent of its blossoms while a similar tree with a hive of bees in the cage set fruit on nearly one half of its flowers.

Beekeepers have become concerned about the danger of spray poisoning in the orchard. If the orchardist used arsenate of lead in the spray, the bees which visited the sprayed trees will be poisoned. Many of the field bees are killed and the pollen taken back to the hive is also poisoned. This is eaten by the young nurse bees and they continue to die and continue to do so as long as the poisoned pollen is available. Such colonies become unproductive and are a total loss to the beekeeper. The insecticide, arsenate of lead, is used just as a single example, therefore, the rule is do not apply insecticide during period of bloom or at least until the hives have been removed from the orchard.

The fruit grower must learn to understand the problems of the beekeeper, and the two must work in harmony and cooperation or neither will prosper.

In my own mind I seriously doubt that the orchardist could profitably get by without the honey bee; no modern fruit grower could have continuing success without this little helper. Each year we move from twenty-five to thirty strong colonies into our twenty-five acre apple orchard during the period of bloom. The honey bee is the orchardist's most valuable pollinating agent, wind included, and without this pollination of the fruit trees an important segment of our agricultural economy would be seriously handicapped. In the future more and more will the use of colonies of honey bees be subscribed to by the farsighted and up-to- date orchardist for the purpose of crop insurance through good pollination, the basis of a good crop of fruit. For the bumper crop is the desire of the fruit grower.

The honey bee wings her eager humming way in the summer sun in search of food for the countless children of the hive. This is the obvious purpose of her labor, but the real purpose is hidden from her (as the chief ends of life so often are) and is infinitely more important; it is to add to the bounty and the beauty and the fragrance of the world.

I threw me down in a clover field
Beneath a cloudless sky.
"My life is nothing but endless toil!"
I cried with a weary sigh.

The bees were flitting from flow'r to flow'r,
Working with all their might.
"Why rest you not, little bees?" I said.
"Why labour from morn till night?"

"Ah, no!" Hummed one, as she lit quite near
To my throbbing and aching head,
"There are thousands of helpless babies at home
Who'll die if they are not fed."

And under the sky I lay for a while
On my bed 'mid the clover bloom.
"They fancy they drudge for the children," I mused,
"And bear with joy their doom.

"But Nature impels their ceaseless search
For nectar the livelong day,
Because she would brighten the dull old earth
With countless blossoms gay."

I rose from the ground with a new-found zest,
With a stronger and braver heart.
"I'll not be shamed by the bees," I cried,
"But will play a manly part!

"My tasks are lonely, my duties dull,
But I'll never again repine;
Who knows but my humble toil may serve
Some hidden end divine?"

Poem from C. Williams
"The Story of the Hive"

Literature Cited

Grout, Roy A.
1954. The hive and the honey bee. 423-439.

Hootman, H. D. and Cale, G. H.
1951. Busy bees bring bending branches. American Bee Journal: page 19.

Matheson, Robert.
1951. Entomology for introductory courses. page 560.
Pellett, Frank C.
1944. A living from bees. page 123.
Pellett, Frank C.
1931. The romance of the hive. page 133.
Phillips, Everett F.
1928. Beekeeping. page 389.
Rahmlow, H. J.
1951. Fruit pollination. American Bee Journal: 198-199.
Stricker, Milton.
1953. Replacement and increase for the pollinculturist. American Bee Journal: page 157.
Wedmore, E. B.
1932. A manual of beekeeping page 95.
*Williams, C.
1928. The story of the hive. 106-108.
* reference of poem

Pollination of Bird's-foot Trefoil

This picture by Richard Trump is on the cover of Grout's "Planned Pollination, an Agricultural Practice." Shows a bee on trefoil.

Both the usual bird's-foot trefoil and big trefoil are practically self sterile and dependent on insects, particularly honey bees, for seed formation. Harvesting is difficult because the mature pods snap open, scattering the seed on the ground.

Bird's-foot trefoil is finding increased use as a plant for permanent pastures. It is a deep-rooted perennial, heat and drought resistant, and has a wide soil tolerance. Frank C. Pellett, former field editor of the American Bee Journal, reported that this trefoil would do well on soils where clovers or alfalfa did poorly. It produces seed abundantly and is able to maintain itself when well established. Pellett has reported a satisfactory stand that was ten years old. Trefoil is palatable to stock and has high feed value. It survives competition of grass and weeds and can stand severe winters.

H. D. Hughes and M. E. Heath, Iowa State College, report a seed yield from three-fourths of an acre that netted 171 pounds of seed to the acre. The trefoil was windrowed as it was cut, thrown into a stack two days later, and covered for about 3 weeks before threshing. Another yield from 1.3 acres amounted to 119 pounds of clean No. 1 seed to the acre. This field was cut when the seed pods were dark violet to brown in color, windrowed the following morning, and, although it rained the next two days, the crop was turned for curing without serious loss from shattering. It was combined a week after cutting.

Thorn K. Berg, nursery manager of the Soil Conservation Service, Winona, Minnesota, reports a 7½ acre field that produced 200 pounds of seed to the acre with 25 colonies of honey bees nearby. He was quite certain that the bees played a large part in this heavy yield of trefoil seed.

Skolness Honey Farms

The following are two reported experiences with trefoil. The first is from the Skolness Honey Farms at Glyndon, Minnesota. Arthur Skolness, one of the two brothers in a big trefoil seed producing outfit, and secretary of the Red River Valley Certified Trefoil Seed Growers Association, visited, with his brother, here at Hamilton recently.

Skolness Honey Farms farm 2000 acres with 1000 acres devoted to bird's-foot trefoil certified seed production. Two hundred acres produce certified park bluegrass and 200 acres are in soybeans; the balance in summer fallow, sugar beets and oats.

Over 500 acres are planted to Empire Trefoil. A great many farmers have difficulty in completing first growth hay harvest by late June. This results in the harvest of coarse, stemmy hay of poor palatability and reduced feeding value. Empire bird's-foot trefoil blooms from 10 to 20 days later than alfalfa, red clover and the early type bird's-foot trefoil. Thus with Empire and a late timothy, farmers can harvest leafy palatable hay in June and early July. By proper use of Empire, farmers can extend the period in which first growth hay of good quality can be harvested.

Over 400 of the Skolness acres are planted to Viking trefoil. Viking is an improved early type trefoil released by Cornell University. It is upright in growth habit and blooms at the same time as alfalfa, red clover and European bird's-foot trefoil.

Among the early type varieties, Viking has in experiment station tests been the most hardy and persistent. It is a vigorous variety adapted for hay, silage and grazing. In yield trials Viking has been higher yielding and more consistent in performance than European imported or common uncertified seed sources. Viking, when cut twice for hay or managed under simulated rotation grazing has been higher yielding than Empire. Viking has persisted very well under hay and pasture conditions.

For the pollination of trefoil, the Skolness boys maintain 1800 colonies of bees, with the help of John Wilson of Williams, Minnesota, a bee man of long experience. For best results the bees must be in the fields by early June, about one colony per acre. They also do custom pollination in trefoil. Some of the bees are left back at their permanent locations where they do a good job of honey production and serve to hold locations.

The trefoil is sprayed with dieldrin before the bees are moved in and sometimes after the bees have been moved out, just before harvest. Chief trouble is from crickets and the spray must hit them while they are young and not fattened as that tends to absorb the spray and hinder the death rate. They use laughing gas on short moves in and out of locations.

Spraying, pollination, harvesting, cleaning, packing, as well as selling and shipping certified bird's-foot

The bright yellow flowers of bird's-foot trefoil.

trefoil is a highly specialized job. Seed yield varies from 10 pounds to 200 pounds per acre. Bees must be packed very early to have strong colonies for the early pollination. The colonies are set in groups of four and packed in paper cases.

They bottle all their honey and sell it labeled as trefoil honey and we can assure readers that it is a high quality table honey of delightful flavor and color.

Problems with Trefoil

Our second trefoil report is from Eugene Dietz of Mason, Wisconsin, and his contribution is given as we received it from him:

The Empire variety of trefoil, which I have, blooms in the Lake Superior region from sometime beginning in mid-June on through July until the early part of August. It has six weeks of continuous bloom depending on the temperature and rainfall of the summer. The production of flowers is so immense that one wonders how so many blossoms can find standing room.

During this time my bees are continually covering the flowers. Each bee brings back nectar and pollen. The trefoil blossom is so constructed that the visiting bee, in reaching for the nectar, always gets a dash of pollen on its thorax, which it wipes off into its pollen baskets. As a result of this, the hives during the trefoil bloom will expand rapidly in worker numbers and honey accumulation. Considerable swarming occurs in July, due no doubt to this abundance of food. However, I find that any swarms I capture in July, if they have any size at all, will soon have the new hive filled with honey, and soon will need supers.

The quality of the honey is of the finest. Bird's-foot trefoil, in my estimation, is the beekeeper's dream plant. Once established on a field it remains year after year. In this area, trefoil is followed by second crop alfalfa bloom which continues the nectar season until October.

Last year I had 60 acres of Empire trefoil, and about 100 swarms of bees. I raise the crop for seed, and have the bees to do the pollinating. I am only a second rate beekeeper, but I do know something about trefoil.

This crop is now being grown from North Dakota to Maine. Contrary to most published reports, it is an easy crop to get started. Failures in the past, so far as I can ascertain, are due largely to using cheap European seed, which comes from France and Italy, and is not hardy in cold upper Mississippi Valley, or the Great Lakes Region. Also failure to obtain inoculation of the new seedlings can lead to failure of the stand.

Success with trefoil, therefore consists in using hardy Empire seed, which is of American origin, and using plenty of inoculant on the seed. Further success is assured by having the fields well fertilized with phosphorous and potash fertilizer at the time of planting, if the soil tests call for these. Many hilly pasture lands could be now growing trefoil if somebody would simply broadcast inoculated Empire trefoil seed on these lands, early in the spring before the frost goes out. Empire trefoil is a native plant in many parts of New York, and it has made its way by moving from place to place in hay and animal droppings. It will take hold and grow wherever wild white clover is a native plant.

I believe that beekeepers could be instrumental in getting trefoil growing in their neighborhoods by discussing this crop with their farmer friends and urging them to plant it, sharing the cost of seed, if necessary. Empire trefoil is a wonderful pasture legume for cattle and sheep. It is being used widely in Iowa for this purpose, and I estimate that in Wisconsin there is need of several million acres of trefoil on our dairy farms. Where trefoil is being judiciously pastured, bloom continues all summer long, for the nipped off plants try to produce blossoms if possible before the year goes by.

Empire trefoil seed heretofore has been rather expensive, since this crop shatters its seed on ripening, and harvesting the crop has its problems. However, recently more fields have been sown for seed purposes, and more seed is available on the market.

Most of the States in the trefoil belt put out useful published material on how to establish fields of trefoil. Some do not. If you wish further information on this plant, consult your county agricultural agent. If he cannot supply you, drop me a line and I will send you some mimeographed material on how to get a stand of trefoil.

New Honey House at Beaver Lodge

I attended the field day at Beaverlodge on June 13th and was most impressed with the new honey house built by the Federal Government and located on the Beaverlodge Experimental Farm. Work is to be carried out on the inside wintering of colonies, employing controlled temperature conditions. Contrary to popular belief the temperatures will be cold (approx. 42° F) rather than warm. This work has great possibilities. Over 100 beekeepers attended this field day which was very successful.

(R. Boch in British Columbia Honey Producers' Association News, October)

Bees in the Production of Cucumbers, Squash and Melons

by F. A. Robinson
Florida Experiment Stations

Among the more important vegetables now being grown in Florida are cucumbers, squash, and watermelons. The acreage planted to these crops is increasing each year and along with the increased acreage has come an increase in the problem connected with their production. One of the most important of these is that of obtaining adequate pollination in the large fields. All of these plants are monoecious; that is, they produce both male and female flowers on the same plant. However, the male and female organs are borne in separate flowers. This fact along with the fact that the stamens, which are the pollen producing organs, are located deep within the throat of the flower, makes these plants almost entirely dependent on insects for pollination.

There is still another factor which affects the pollination of these crops and that is the relatively short period of time during which the female blooms are open and receptive and the male flowers are open and the pollen mature and capable of fertilizing the female flower. If no insects are present to accomplish the transfer of pollen during this receptive period, little or no fruit will be set and the yields will be greatly reduced. One can easily see that it is vital that the grower of cucumbers, watermelons, or squash be assured of a plentiful supply of pollinating insects in the fields.

Years ago the grower was not aware of any problem in so far as pollination was concerned, but wild pollinators have been so greatly reduced in numbers that they are no longer sufficient to assure adequate pollination of large fields. This reduction in the number of pollinating insects has been brought about by several causes, the most important of which is the cultivation practices which are followed in growing these crops. For example, the growing of watermelons successfully requires the use of new land each year because of fusarium wilt, a fungous disease, which grows in the soil. The average grower of watermelons in Florida clears a field, plants one crop of watermelons and lets the land lie idle for eight to ten years. In clearing the land, the nesting sites of bumblebees and other wild bees are destroyed and the population of these insects reduced until their numbers are no longer sufficient to assure adequate pollination of the melon crops.

There is another practice which has tended to reduce the number of wild pollinating insects and that is the large scale use of insecticides. In trying to control insect pests attacking their crops the growers have unwittingly destroyed a large number of the beneficial insects as well. So the growers are more and more turning to the use of honey bees to assure adequate pollination.

Honey bees are especially valuable as pollinators since they are more or less under man's control and their numbers can be increased or decreased simply by moving colonies into or out of the fields. Then, too, the honey bee has the trait of sticking to one crop. If a bee visits a cucumber or squash flower once, then it will continue to work those flowers as long as they remain open or until the nectar flow ceases.

While some growers are fortunate enough to have apiaries located near their fields and thus are assured of adequate number of bees; others must contact some beekeeper and make arrangements for him to supply bees for pollination. This practice is becoming more frequent each year and there are several questions which have arisen that should be discussed. First of all, there is the question of payment to the beekeeper.

Some growers felt that the beekeeper should be willing to place bees in his fields and receive no payment other than the honey the bees might produce. Most of the growers soon found that this was not sufficient inducement since in most instances the colonies of bees not only failed to produce any surplus honey, but usually lost weight while working in the cucumber, squash, or watermelon fields. At the present time the beekeeper usually demands a cash payment as rent for his bees. Usually this

Melons and bees; they go together.

rental fee is about $5.00 per colony. Generally this cash rental has proved satisfactory to both parties but some beekeepers feel that five or ten dollars is not sufficient payment and they have tried to work out agreements whereby they will share in the increased crop production.

In addition to payment for the bees there are several other agreements which should be made, such as the location of the colonies in the fields, and the use of insecticides while the bees are in the fields. Some growers want the colonies placed singly throughout their fields. Since this practice greatly increases the labor and time spent by the beekeeper, and consequently his expense in locating and checking his colonies, he should try to reach an agreement whereby the colonies may be placed in groups in as few locations as possible, and still have all parts of the fields within easy flight range of the bees. Tests have shown that placing the colonies in this manner gives as good pollination results as when they are placed singly.

The other question, regarding the use of insecticides, is probably the most important point of all. Each year a few colonies are killed simply because insecticides are applied without regard to the safety of the honey bees. Since cucumbers, squash, and watermelons, like all other crops, are subject to attack by several insect pests, everyone should realize that insecticides will probably have to be applied while the bees are still in the fields. The insecticides most widely used on cucurbits are parathion, lindane, and TEPP. All of these materials are extremely toxic to honey bees as well as to the harmful insects. In spite of their extreme toxicity, these materials can be applied to cucumbers, squash or watermelons during the bloom with little or no danger to honey bees. The blossoms of these crops open in the early morning and all are closed by early afternoon, and the next day new flowers open. One can rarely find honey bees in the fields by mid-afternoon. Knowing this trait of the cucurbits the grower can arrange to make all insecticide applications in the late afternoon when bees are not working in the fields. Then the flowers that are visited by bees the following day, being freshly opened, will not contain any insecticidal residue. By timing the insecticide applications in this manner they can be applied with no danger to the honey bees.

This point regarding the timing of insecticide applications on cucurbits is stressed in all recommendations made by the Florida Agricultural Experiment Station, and when followed provides adequate safety for the honey bees.

(from August, 1952)

CUCUMBERS UNDER GLASS

by G. H. Cale

Carl Killion, our Illinois Chief Inspector and comb honey producer, wrote a piece about the "Cucumber and the Bee" way back in 1939, telling a story about the Davis Gardens at Terre Haute, Indiana, the "World's Largest Greenhouse." Actually the gardens cover seventy five acres, thirty four under glass with a total of thirty eight houses. The principal crop produced then was cucumbers and bees were used for pollination.

The soil was tested daily for moisture with a lab. test each week for soil, vines and fruit. The "cuke" is semi-aquatic and needs much more moisture than nature provides. Under glass the grower can furnish heat, moisture and fertility in proper amounts. Sunlight is perhaps more essential than any other factor. However no matter what the ingenuity of man may provide the essential job of pollination has to be left to the bee.

That story about the Davis Gardens takes me a long way back in my own experiences to when I was a boy on my grandfather's farm in New Jersey, just a few "modern minutes" from New York City. He was a market gardener and had several big greenhouses that were about as modern as today's greenhouses. In winter we raised head lettuce under glass; then we switched to cucumbers. Open, shallow, sand wells provided a flood of water through pumps for the plants. The vines were raffia tied to V poles. Insects were controlled by tobacco stem smudge and soil was steam renovated. Seed was highly selected for the reduction of fruit seed, slender size, color, uniformity and so on.

It was my job to water, smudge, tie and sweat. Also I had to "tend" the bees. Believe it or not, that is where I began; and I'm still keeping bees.

Bees near greenhouse in New Jersey. Maybe they'll fly into the house and maybe they won't.

Photo from Milton Stricker, also in New Jersey. The bees in this colony can go in the house or fly outside.

The hives were located in the draw sashes along the back wall. Each hive had two entrances. One let the bees outside; the other released them under the glass. We had no pollination problem: Varieties were interplanted for the right crossing. The colonies, having access to the outdoors, also made some honey; enough to provide for themselves.

At the end of the season in summer they were still good colonies. Then the owner came to take them back home. He was an old gentleman by the name of Linas and when he brought the bees he would always tell me: "Now, sonny, you just keep them critters in food. Keep them saucers filled." I promised. The saucers were just that and I kept syrup in them all the time. We would laugh at that today but then it seemed a serious duty.

Later I taught school in the Independent Agricultural School at Danvers, Mass., and the principal of the school, Mr. Smith, and I noted that there were hundreds of greenhouses around Boston, many of them used for raising cucumbers. So we developed a business in supplying bees for the greenhouses. We salvaged all the wax when colonies died and we were paid for the bees and serviced the colonies. As a side line it paid but no one would claim there was any future in it. But what a world of "cukes" those bees set!

Later, among the market growers of western Massachusetts, I was still a cucumber pollinator. Also an itinerant beekeeper who cared for small apiaries on farms, among gardeners and among the rich folks in the hill country. Some of this work was looked upon as necessary since, even in those days, the more intelligent agriculturists considered bees as necessary as land, or seed, or fertilizer.

Now the whole field of pollination is just opening before us and more and more beekeepers and farmers will get together for mutual profit. Even the small beekeeper will share in it.

However, when it comes to controlled pollination the cucumber grower, farming under glass, is still the most highly skilled partner in the deal between honey bees and crop that exists in the entire agricultural field.

Bee Concentration Is Good Business

by Harry J. Whitcombe

Concentration of bees for pollination purposes now covers many field crops and these crops vary so much in their needs not only from state to state, but from locality to locality within states, that books would only begin to cover the subject. In this short article, it will be necessary to limit discussion to only some phases of alfalfa seed production. The basic theories are applicable not only to the legumes but to many fruit and nut crops.

Large concentrations of bees in alfalfa seed fields have been occurring accidentally for years in different areas. It was only after the work by Jones and Vansell that there seemed correlation between availability of bees and larger seed crops. Actual concentration of bees in an alfalfa field with payment to the beekeeper was first tried in southern California but without trained observers was inconclusive. Growers in northern California had long been receptive to bees being placed in their fields for honey production, hoping to secure adequate pollination by this means. Following the southern California experience, a carefully prepared and controlled field experiment was run in northern California which produced spectacular results. Known seed production was almost trebled. In this case the limiting factor was not the pollination but the inability of the plants under the cultural practices used to produce more seed. The following year the work of agronomists to crowd the plants in a race with apiculturists to furnish adequate pollination for these plants, resulted in an actual crop of seed being set of approximately 1800 pounds to the acre. The theoretical maximum is approximately 3,000 pounds.

Now we find a great change in California beekeeping. Thousands of colonies of bees (about 50,000 in one operation alone) are moved hundreds of miles for the express purpose of pollinating alfalfa. Beekeepers are cooperating so as to be able to place thousands of hives in a field in a very short time. The outside conversations at bee meetings are not all of honey or marketing, but of contracts —seed contracts—how much they received last year and what it is going to be this year. Beekeepers' phones are ringing with farmers calling and wanting bees on their places, not asking them to move them off. Beekeepers and research men, apiculturists and agronomists alike, are scratching their heads and wondering where do we go from here. Everything from now on is a trial and error deal.

The guess work so far has been good but there are too many things we do not know. For instance, why does something work in one area that does not work in another? Why does one thing occur in a field that does not follow in a field a mile away? Can a better bee be developed for pollination than the ones we now have? Why does one type of colony do a better pollinating job than another? Is it better to supply the pollination over a long period of time or to let the blossoms accumulate for ten or twelve days and give two or three days of intensive pollination and then remove the bees for another ten or twelve days? Why do bees gather almost 100% of alfalfa pollen in one place and less than 1% in another? All of these are questions that we should be able to answer today, but in any event will have to be answered if we are to put the business on a sounder basis. We are producing results but we are doing it by a bull-in-a-china-shop method—by brute force rather than by finesse.

Concentrated pollination is a whole new concept of beekeeping. Deliberate saturation of an area means so many bees that no surplus honey is expected but rather that

feeding may have to be done to provide winter stores. It requires the moving of hundreds of colonies of bees weekly so that they can never learn the territory beyond the field needing pollination. It is the jamming of bees in an area not for cans of honey but for bushels of seed. It provides a good living for beekeepers, not through the largess of government price support but through their own initiative and enterprise. In California, it is the changing of an agriculture from no certified seed to millions of pounds of certified alfalfa seed. The beekeepers are the recognized deserving and earning partners in agricultural production, no longer the undesired tenants consigned to wastelands.

The future for American beekeepers has never had more promise. A great number of problems must be solved and the bumps may be hard and many, but now can be dimly seen the future for which the bee was created. It remains only for the beekeepers to be big enough and strong enough to reach that goal. The well-being and prosperity of the United States depends on the well-being and prosperity of American agriculture. American agriculture depends on legume seed production, and legume seed needs the services of the bee for maximum production. A greater challenge has never been laid at the doorstep of any industry.

California

(from July, 1952)

Legume Seed in the Bag

by W. E. Dunham

Ohio Experiment Station

The widespread alarm over declining legume seed yields resulted from the fact that the supply was falling far short of the demand with attendant high prices. This situation focused attention as never before on the necessity of working out a solution whereby adequate seed supplies could be obtained at prices which farmers could afford to pay. In fact the situation constituted a grave threat to the principles on which American agriculture is founded. In our agricultural system the liberal use of legumes is vital in our conservation and livestock programs as well as in the production of grain, oil and fiber for animal and human needs.

Associated with this widespread interest in seed production has been the current heightened activity among growers to produce more seed, especially certified improved varieties. In many respects the tempo of this movement has been ahead of research findings and as a result trial and error has been a costly operation. Many growers do not appreciate what research really represents and that it takes time to work out thorough and reliable methods applicable for field conditions. Outstanding progress has been attained in alfalfa seed production in the West. Dr. Knowlton reports that in 1951, where a strict program was followed by farmers in two counties in Utah, the yield was approximately 10 bushels per acre. Yields of 20 to 30 bushels per acre have been reported in California. Going eastward into the humid region the yields from alfalfa, red, mammoth red, and alsike clovers have been encouraging in numerous cases. There also have been many disappointments. Research workers are most cognizant of the many complex factors associated with successful seed production. Seed growers, beekeepers and other allied groups are now realizing more fully the possible grave pitfalls they may encounter and consequently their dependence on research findings.

Potential vs. Actual Yields

One of the present outstanding difficulties in this new era of seed production is the known amount of seed on the plants as compared with the actual yields in the bag. Much authentic information explaining the discrepancy of yields has already been gathered. Of first importance to the seed grower is a rather accurate "rule of thumb" method for determining the potential yield based on actual seed on the plants. Otherwise he has no index as to the efficiency of his harvesting technique. By knowing the average number of good plump seeds per head and the average number of blossom heads per unit area, a fairly accurate index of seed yields can be made. Computing tables for red, mammoth red, and alsike clovers have been worked out by the Ohio Agricultural Experiment Station.

Like other related phases of seed production, efficient harvesting methods play an important role in the success of the whole seed growing program. Improper timing of combining operations or cutting stands of legumes can explain much seed loss from shattering. Legumes should be cut early in the morning when there has been a heavy dew and never during the day when the clovers are dry. The present plant vigor level of clovers in general, will, if provided with bee coverage, produce the bulk of seed during the first 10 days of the blooming period. After this, the number of seeds per head usually drops off very rapidly. The different methods of windrowing should be evaluated carefully with attention focused on the method which most effectively reduces seed loss. Uniform windrows, threshed as soon as the legume is properly dried, help in reducing further losses. Beating rains and prolonged inclement weather which defer threshing operations contribute to poor yields. Combining and stationary threshing machines play their part in reducing seed yields. Reports show that 25 to 80 per cent of the seed may be lost during this operation. Efficient harvesting is highly important in the chain of complex factors governing successful seed production The over-all success of the venture is no stronger than the "weakest link in the chain."

There are still many problems in seed production which, when worked out fully, should add "seeds in the bag." The lack of plant vigor is definitely a bottleneck in seed pro-

duction. The development of disease-resistant varieties having the capacity for heavy seed production and meeting the standards for forage management will require long-time investigations. Knowledge on the influence of cultural practices, soil types, tilth, fertility levels and the addition of chemical elements is very essential. From the standpoint of legume pollination coverage it is especially important to develop plants which are attractive to pollinating insects and which will yield attractive pollen and nectar in quantities that will stimulate maximum activity by bees. Dr. Schuel, now in the Department of Apiculture, Guelph Agricultural College, Ontario, found in his red clover research in the Department of Botany, Ohio State University, that some clover plants produced sweeter nectar than others and that these same plants yielded the largest amounts of nectar.

Control of injurious insects and plant diseases is essential in promoting plant vigor. The entomologists have done a good job of devising methods and types of insecticides to control insects on legume plants. However, there is much research to be completed from the standpoint of the conservation of our beneficial insects. More pathological research on legume plant diseases is most essential and badly needed.

Concentration of hives of bees at different rates per acre for the different legumes without too much regard to colony condition has been the chief method employed for pollination coverage. In humid regions this method has not been entirely satisfactory because of the competition of too many similar legume fields without bees as well as other blooming plants in the same area. For example a farmer may rent bees for pollination and find his neighbors are harvesting almost as much seed as he. In reality he is financing the pollination of his neighbors' crops. Supplying bees on a community basis seems like a logical approach towards the solution of this problem. More intricate research on a long-time basis pertaining to colony management within the hive should raise the daily colony requirements of nectar and pollen as well as encourage greater storage of these products within the hive. A goal which may not be entirely attainable for research on legumes having distinct corolla tubes is the accumulation of information on bee behavior that will result in pollination at the stage when blossoms are most attractive for bee visitations. Ultimate research resulting in the most efficient pollinating colony unit is not an easy task.

From this awakening of agriculture to the indispensable role of the honey bee in the welfare of mankind, there has come a broader and more diversified aspect to bee culture which gives wider scope and stability to the industry. Already thousands of colonies are being utilized for pollination services and a far greater number will be used in the future. This pollination service is so fundamental and the need so great that the largest portion of our beekeeping personnel may as time goes on be involved in this specialized phase of agriculture.

(from July, 1952)

Dr. Taylor's Nylon Stockings

I am shocked! I read the item in November on page 450 by Richard Taylor on the use of nylon stockings for clarifying honey. Now how can our industry expect to sell a wonderful product like honey if the public were to think that this is a general practice. And why should anyone advise the use of discarded stockings. Would you or I want to use honey if we even thought it was strained through discarded stockings? We all love our wives but not enough to strain honey through her nice little discarded nylons. It would have been more acceptable if Dr. Taylor recommended new nylons.

Carl Killion
Illinois

Grasshopper Spray Losses

Extensive investigations into bee losses from grasshopper sprays by Joe Moffett and his Colorado beekeeping cooperators indicate that while there were occasional severe losses, on the whole losses were not heavy. Much spraying was done while the clovers were in bloom with two ounces of aldrin in each gallon of diesel fuel.

Santa Interested in Royal Jelly

During the Christmas season while on a shopping trip with my two small daughters, we were approached by Jolly Old Saint Nick, clad in the usual red suit, with rosy cheeks, sparkling eyes and a long white flowing beard. After asking the children the usual questions he turned to me and I was amazed to hear him say: "I hear you have been raising royal jelly this year." For a time I was mystified, wondering how Santa, way up at the pole, knew about royal jelly or that I produced it. Noticing my bewilderment, he came closer and whispered: "Don't you recognize me?" Then closer inspection revealed a friend who had become interested in bees as a hobby and had several colonies of his own.

C. S. Bennett
Hattiesburg, Miss.

Lt. Governor Knowles Breakfast Cocktail

At the 1958 fall convention of the Wisconsin Beekeepers Association, the principal speaker, Lt. Gov. Warren P. Knowles, gave his answer to extreme fatigue induced by the constant traveling and speaking that politicians endure during campaigns.

Every morning he takes a "Knowles Breakfast Cocktail,"—which is concocted as follows:

Place two raw eggs and a tablespoon of honey in a mixer until well beaten together. Pour into a glass and fill the glass with orange juice. Stir well and drink.

Gov. Knowles found that this drink helped so much during his speaking campaigns that he now has one every morning. Mrs. Knowles likes it too.

(The Badger Bee)

Nectar and Pollen Plants Of Colorado

Bulletin 503-S of the Colorado State University Experiment Station at Fort Collins. Written by William T. Wilson, Joseph O. Moffett and Harold D. Harrington, 72 pages, 11 plates. Plants are listed alphabetically by common names. With the facts about each plant a summary is given of observations on bees visiting the flowers, with localities of the observations. Per cent sugar in the nectar, with size of honey sacs and color of contents are included. Over one hundred nectar plants are discussed and there is a list of over 60 pollen plants. It is a very unusual and valuable publication.

POLLINATION CONTRACTS

by Troy H. Nance

It is often said, "There is a loophole in every contract; and a contract, no matter how binding it may seem, is no better than the parties who make it." However, in my years of pollination work, I have found that much time is saved and much worry and misunderstandings are averted when there is a written contract executed by both parties.

My experience proves that the simpler and shorter the contract, the better. Seed growers, like beekeepers, don't like long, drawn-out, complicated legal terms. Many times they cannot get together on a good deal because the contract they are trying to enter into has too much legal jargon in it, and they both eventually are confused and back out of the project.

The following is a form of a simple contract I have used without losing one cent in pollination fees or suffering serious loss from poison sprays:

Contract

Mr. John Doe, beekeeper of Beeville, California, and Mr. Richard Roe, seed producer of Cloverland, California, do consent and agree:

That said beekeeper shall locate 300 hives of bees as designated by said seed grower for the purpose of pollinating clover for seed. Said bees to remain as located until released by said seed grower at the end of the useful pollination period.

Said beekeeper reserves the right to remove the bees to a safe place for a period not to exceed ten days before returning the bees to said location if the insecticide known as "Kill-more-bees" is used on said clover seed field or any other blooming plants on the property on which the bees may be working. It is also agreed by said seed grower that any insecticide to be applied to said seed field shall be applied before the hour of 8 A. M. or after the hour of 8 P. M. (California Daylight Saving Time).

Said seed grower reserves the right to employ the services of an official apiary inspector at any time he may see fit to determine the strength of the hives of bees as to their ability to render full pollination activities. Said beekeeper agrees that any hives of bees below the necessary strength shall be replaced by said beekeeper by a like number of hives of bees of full strength.

Said seed grower agrees to pay said beekeeper the sum of $5 per hive for said pollination services. One-third of this shall be paid at the time of placing the bees on location. Balance to be paid at the end of the pollination period.

.....

Beekeeper

.....

Seed Grower

* * *

Note that in the contract reference is made to the main questions your new seed grower customer will want to understand before he signs on the dotted line. These questions are: "I know bees increase seed yield but I do not know anything about a hive—how do I know your hives are going to be full of bees, other than just your word for it?" "What happens if we have to spray for insects—won't it kill all the bees? You will lose your bees and we will lose the pollination." "Should the hives be left in the field until all the blooms are gone?"

I use the word "hive" at least until my new customer gets wise—as I was asked once "how many hives do you put in a colony, about ten?" The paragraph which refers to the amount paid the beekeeper can easily be changed to a percentage of the seed as payment.

I find it helps in gaining new business to hand out or mail the bulletin, "Planned Pollination—an Agricultural Practice" by Roy A. Grout, published by Dadant & Sons, Inc., to prospective customers well before the season begins. It is profitable to follow this up with the following information which I believe was originally drawn up by Dr. J. E. Eckert:

According to the agronomists, it takes from 30 to 35 days to mature alfalfa seed, about 30 days for trefoil and red clover, and 21 to 25 days for Ladino clover *after the blossoms have been fertilized.* This means, then, that the grower can advise the beekeeper of the approximate date he intends to harvest the seed crop and that the beekeeper can remove a majority of the colonies to more favorable nectar and pollen locations for the balance of the season. The grower cannot profit by having a concentration of colonies in his fields during the last three or four weeks before harvest time, and it would be to the beekeeper's advantage to move out a majority of the colonies so the balance can make a surplus of honey and pollen for the winter period.

Many beekeepers in California, who have left three to six colonies per acre in the seed area until just before harvest, have found that their colonies were lacking in strength in spring probably due to a shortage of pollen and honey, as well as to a longer exposure to toxic chemicals.

In many cases, colonies can be moved out of dry land seed areas in time to pollinate legume fields under irrigation. The time of harvesting will vary with the field but should be done before any serious danger of loss from rain.

Pollination is here to stay—the contagion is spreading. Many nonseed growers consider it good agricultural practice to have bees near their crops and we hear such remarks as: "My crops seem to grow better whenever there are bees around," and " I don't have to spray so much since I have bees on my place."

Even my gas station attendant has changed his greeting to "How's the pollination," instead of "How's the honey."

California
(from August, 1952)

Commercial

Queen Rearing

by J. E. Hastings

Choose the best possible mother for a breeder queen and rear the best possible daughters from her for requeening colonies. I like to keep my breeder queens in nucs. This is an advantage in manipulation and it lengthens the service of older queens. I try to hold the nucs to about four standard combs of brood. As surplus brood and bees are produced, they may be used to fill extra mating nucs.

The first step is to choose a cell-building colony since cell building is an important factor in rearing good queens. It must be chosen carefully and handled to maintain maximum efficiency. It should have two standard hive bodies crowded with bees and brood. The colony should have a good supply of pollen and honey and a good laying queen.

All my colonies are overwintered with a special inner cover with an entrance for winter use. During spring build-up they use both upper and lower entrances. If a colony is chosen for a cell builder, I leave on this top entrance or use a super with a flight hole.

Let the queen have the run of the bodies until twenty-four hours before the first graft is given. Then isolate the queen in the lower brood chamber with any surplus capped brood, pollen and honey and adhering bees. As the field bees were using both upper and lower entrances she will have a fair share of them to supply necessary requirements.

In the upper brood chamber where our cells are to be produced, place combs of honey or nectar at the outer edges; then a comb of pollen or capped brood about to emerge. Then put the younger brood in the center and also a comb of pollen and nectar and two combs of very young larvae. Shake all the young bees possible from the combs to be left with the queen without leaving her with insufficient protection for any brood she may be given. In other words have the cell-building portion crowded to capacity with bees of suitable age for wax and royal jelly production. Now put an inner cover between the two bodies leaving the upper one in a queenless state. Then the cell builder is ready for the first graft.

Now let us return to the breeder queen and prepare to select larvae of a suitable age for grafting. Put an empty brood comb in the center of her brood nest. The following day it should contain a good supply of eggs. We should have another nuc on hand with four to six combs of nurse bees shaken from a populous colony. It should contain no brood, only a good supply of nectar and pollen. No entrance is allowed but the bottom, or a part of it, should be screened for ventilation. Put this "swarm box" in a shaded spot. The bees are queenless and desperate for larvae to feed to produce a new queen.

Then put the comb of eggs from the breeder queen directly in the center of this nuc. This should be four days from the time the empty comb was given to the breeder queen so the larvae will be ready for grafting. They will be all but floated out of their cells with royal jelly. This is a decided advantage in the rearing of top quality queens. Any larva destined to become a queen must never be without royal jelly even for a few moments during its feeding period.

New Officers of the Federation

At left, President Lawrence Budge, Idaho; center Secretary Joseph Moffett, Colorado; right, Vice President, Henry Hansen, Iowa.

Now let us work out a plan so the cell builder will be ready to accept these larvae at the proper time. Unless there is a very heavy nectar flow, the cell builder must be fed a fifty-fifty sugar syrup beginning three days before being given grafted cells and continuing until the cells are capped. The inner cover with the entrance is left on and it must have a hole to allow the use of an inverted ten-pound pail with perforated lid for feeding. An empty super is placed around the feed to protect it and eliminate robbing. Refill pail when necessary.

The day after the start of feeding the cell builder is when we put the empty brood comb in the center of the breeder queen's brood nest as explained before. Also we then prepare our starter nuc to receive this comb of eggs the following day.

The morning of the third day after starting the feeding of the cell builder we must break the cell builder down and arrange it as previously explained in preparation for the initial graft. Then, on the morning of the fourth day, we remove one of the combs of very young larvae from the center of the cell builder. Shake the accompanying nurse bees back in leaving the vacated space empty, with a comb of very young larvae on one side, and a comb of pollen and honey and nectar on the other. Give the brood you removed to some needy colony. In the afternoon we should find this empty space crowded with nurses seeking larvae to feed. Now we are ready to graft our cells.

Get a comb of larvae not over thirty-six hours old from any colony. Graft these larvae into your queen cells as quickly as possible and gently force the frame with these cells into the vacated space in the cell builder. The cluster of nurse bees will give them attention at once. The next day we are ready to replace these larvae with the specially prepared larvae of your chosen breeder queen. When you remove the frame of cells you will recognize the cells that have been accepted. They should be at least a half inch long. The larvae should have grown some and rest in a substantial bed of royal jelly.

The next step, of course, is to remove these temporary larvae and replace them with the specially fed larvae, now twelve to twenty-four hours old, from our selected breeder queen. It will be found necessary to slightly rip the side of the queen cells to ease the removal of the original larvae. Care must be taken to disturb the royal jelly as little as possible. Excessive disturbance or a change in consistency will result in its removal by the nurse bees and a fresh start made thereby canceling the advantage of the double graft method. As each larva is removed replace it at once by its successor. The slight rip in the side of the cell identifies those worked from those that have not. Return the cell bars to the nurse bees just as quickly as possible.

Ten days later remove these ripe cells and distribute them to mating nuclei. Any method of transfer may be used that does not chill or jar the cells. Either one may result in crippled queens.

I like mating nuclei of four standard frames made up with two combs of capped brood and bees in the center with a comb of honey on either side. Make them up a few hours, or even a day, before distributing the cells. I have small boxes for this made from ⅜ inch sides and top with ¾ inch floors and ends and provided with half inch holes for entrances.

Place the ripe cells between brood combs preferably by pressing the cell lightly into the surface of the comb among the capped brood. Try to place the cell at least a third of the distance from the top bar to allow the bees to cluster around the cell. Ten or twelve days later a young laying queen should be found if the weather has been right.

There are a few points to remember. Never shake bees from eggs or larvae to be used in queen rearing. Brush them. Shaking may result in crippled queens. Never allow the sun to shine directly on larvae or on royal jelly to be used in queen rearing. Try and graft when the temperature is 75 degrees or higher.

The initial graft is placed in the prepared cups without the addition of royal jelly. In double grafting priming of cells has no advantage. Also never allow the cell builder to feed more than twenty cells at one time if top quality virgins are the object.

If a cell builder is to be used for a second graft check all the combs in the upper chamber five and a half to six days after the first cells were given to see if there are any queen cells. Then bring up enough combs of young brood and bees from the lower, or queenright portion, to remake the cell builder. Take capped, or older, brood from above to refill the empty space below. Then we are ready to repeat the grafting again.

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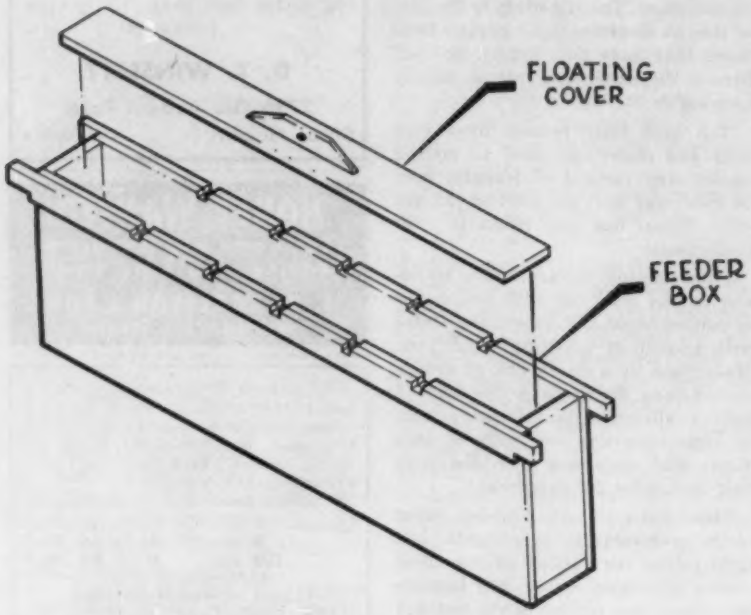

An Apple Box Feeder

by Lew W. White

For feeding sugar syrup I have tried about every kind of feeder that I have seen or heard about. But I did not find one that was fairly handy or that my bees seemed to like until I designed and built my apple box feeder as shown in the drawing. These homemade feeders have some drawbacks but I have found them the most satisfactory of any I have tried. Any beekeeper, handy with tools, can make them. If apple boxes are not available, glass crates will do or some other kind of box of thin clear boards. Do not use gum boards as they warp.

The sides are made of ⅝ thick apple box boards and they are 5½ inches wide and 17 inches long. The ends are two inches wide and five inches long, made from apple box end boards. The bottoms are of standard inch thick pine, two inches wide and 17½ inches long. The hanger boards are ½ x 1 x 19 inches with five ⅜ inch entrance slots in top.

This makes a syrup container two inches wide, 4½ inches deep and 16 inches long, inside which I hang in a super in the place of three combs. I use a small paint brush for covering nails and for caulking cracks and connections with hot beeswax. I use two quarts of syrup in each feeder at a time as the bees seem to work in them better when they are not clear full.

The floating cover is made from a ⅝ inch thick pine board and it is 1¾ inches wide and 15⅝ long with a ⅜ square cleat nailed in the center of the top for lifting out. To make it still easier to lift out this floating cover I make a 3/16 hole in the cleat so it can easily be hooked with a wire.

The easiest way to handle this feeder is first to nail the hanger bar on the side board with the edges flush. I use 1 inch nails for this, taking care not to nail closer than 1½ inches from end of sideboard. Then make five entrance slots in the top of this assembly. Next nail the hanger bar and side assembly to the end pieces, flush at the top. Finally nail on the bottom board after notching the ends so the board will fit flush with the side board. In this way the bottom can be nailed in from two directions.

Oklahoma

Teach The Bees To Use An Excluder

by Raymond Presnell

Bees have to learn that they can go through a queen excluder. With an empty super above the excluder the colony has nothing to entice the bees to go through, especially before the honeyflow begins. As an illustration, put an entrance guard on a colony and observe the bees trying to go through. Some of them will make a dozen efforts before going through; some seem to doubt they will ever be able to do so. But where else can they go? They must go through and, in a day or two, the bees are all passing in the entrance without hesitation. It is the same way with an excluder and as the bees gradually brush the hair off the top of the thorax, they are soon passing through the wires without any effort at all.

If we use a two-queen system and three excluders we have the problem solved. But with only one excluder in a single-queen plan we must teach the bees to go through the excluder before the honeyflow starts, even if we have to feed syrup. Put the excluder up high so the bees will have to take feed down through the excluder. Sometimes when I have to feed in spring, I make a mush of granulated sugar by putting a pint of water with ten pounds of sugar, working and mixing it real well. I also dissolve one sulfa tablet in each pint of water. Then lay a sheet of newspaper on the excluder and spread and firm the sugar on it. Set this on top of the colony. It kills three birds with one stone; it feeds the colony, teaches the bees to go through the excluder, and gives the colony some protection against American foulbrood.

North Carolina

Taking Bees from a Garage

I was visiting my sister-in-law (Mrs. June Frazier) who lives in Coldwater, Kansas and she advised me that a Mrs. Martin who lives about two blocks from her had a swarm of bees in her garage and that she was very anxious to dispose of them. She was unable to find anyone to take them out of her garage for her. Being curious what the situation was I paid Mrs. Martin a visit and being interested in bees I agreed to take them out provided I could get Raymond H. Irwin to help me with the ordeal, which he agreed to.

We went to her home the following week-end and started to take out the bees and honey. Mrs. Martin called in the News Editor from Western Star Newspaper and he came and took this picture I am sending to you along with the news write-up in their paper in Coldwater, Kansas.

The picture shows Mrs. Martin holding a pan of the honey, myself taking the comb honey as Raymond Irwin cut it out and handed it to me. The little girl holding the jar of honey is Mrs. Martin's granddaughter. The jar of honey was from my apiaries.

Wilmer D. Marrs
Oklahoma

Requeening — An Observation
by A. G. Woodman

Our weakest spot is requeening and it is true with a large proportion of beekeepers. I have often wished that someone would work out a more automatic system of requeening.

Years ago Hubbard Bros. at Boyne Falls, Mich., produced a lot of section comb honey and they had what they called a coaxer which consisted of a shallow super of about 4 or 5 inch frames, from which they never took any honey. The frames were filled with honey and stored away, set on the hives early in the spring (they cellar wintered in 1-story hives) to ensure the queen of ample stores and get her going — and were lifted up above comb honey supers and called coaxers.

There are different ways of pulling this stunt. One of our men has been having outstanding success by giving package bees two solid combs of honey when installed.

A Bee in His Armored Suit

Squire: *"What doth thee wish, sire?"*
Knight: *"Make haste squire and fetch yon can opener. A bee hath entered my suit of armor!"*

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JOHN A. NORMAN
GRADY, ALABAMA Route One

WHAT THE BEGINNER WANTS TO KNOW

Question from

Clark Clampitt
Overton, Nevada

► I am a retired railroad man, now seventy-five years old, and I established some bees four years ago. I have used Starlines and Caucasians. The Caucasians are very gentle and one colony made over 200 pounds of honey.

But I am having trouble with moths and with a small beetle that gets into the honey after it is sealed in jars. The first honey that comes off in summer is a golden color and that is what they get into. It also crystallizes in a short time. The succeeding honey is dark amber and they don't bother it and it does not crystallize. I wish you could tell me what these insects are and how to prevent them from getting into the honey.

Answer:

Your black bee sounds like a wonderful producer; it is apparently a Caucasian cross or hybrid. This cross is often a fine producer, but it has been known to be very bad tempered. I think I would probably use that stock myself, just as you are doing. It is wise for a beekeeper to do some queen rearing by selecting his best. It would be better to gain new queens by rearing them than to rely on swarms.

The wax moth has always been a problem for beekeepers, and the problem increases in the South where there are warm winters. In the North, the cold weather destroys much of the moth, but comb must be protected during the summer and fall. Any stored comb should be treated for wax moth. Small numbers of supers, such as you have, may be stored with paradichlorobenzene or moth crystals on the top bars, or treat every two weeks with carbon disulfide.

I cannot figure out what the "beetle bug" that is getting into your honey might be. I know of no insects that will develop within a sealed honey jar. If you could send a sample, I will be glad to try to have it identified and we could then work from there.

Question from
A. G. Colin
Mexico, D. F.

The books on beekeeping in English, in Spanish and in French that I have, are not, as we might say, to the point and besides they have very little information on queen rearing and royal jelly production.

I would very much like to buy a book on this subject but written in the style of a physics laboratory instruction book. Would you kindly give me a suggestion or recommend one?

Answer:

I do not know of a book on queen rearing and on royal jelly production that is written in the style of a physics laboratory instruction book.

I would suggest "Queen Rearing" by Laidlaw and Eckert, published by Dadant & Sons, Hamilton, Illinois as one of the best sources of information on queen rearing and royal jelly production.

If you have any specific questions, I will be glad to try to help you.

Edited by

W. W. CLARKE, Jr.

Pennsylvania State University

A Beginner Begins Beginnering

by Carl Wright

Three years ago I had my first experience with bees. I had a summer job with a widow who owned fifteen colonies inherited from her father. She knew little about bees so they rapidly fell into the chasm of neglect. Being the only brave soul around, the job of maintaining them fell to me. We only opened them twice that summer to super them and to remove honey. I learned little as the owner would not dare open the brood chamber. "It might disturb them," she said. She did not realize that "disturbing" them an ounce meant a pound of honey.

Yet, in spite of our ignorance, those single body colonies produced about two medium supers of sourwood, white clover, and tupelo honey which we sold as chunk honey at $1.50 a quart. So in the Tennessee mountains the seeds of an intense interest in beekeeping were implanted in a twelve year old boy.

In 1957 I decided to order bees of my own and bought a beginner's outfit. In just six months I would be a beekeeper! We had moved to Texas in 1956 where the season begins early. Fruit trees are in full bloom about March 15th and my bees weren't due until April 19th so I missed an important source of colony strength. When the bees finally did come I was bursting with excitement. My equipment had been ready for months while I devoured every scrap of bee literature I could get my hands on.

It was a pefect spring day when the bees arrived so I began installation at once, following instructions carefully. I only got stung twice, my first stings, and I hardly noticed them I was so excited. In Tennessee I had been in hip boots, long sleeves, overcoat, long gloves, and a veil. In this garb a bee could hardly get near me nor I near them as I could hardly move. My new bees fascinated me. They progressed very well on syrup and a light flow from spring flowers. How proud I was of my

little endeavor! When the mesquite began to bloom my bees were building up at top speed. With the fine Italian queen and the clear Texas skies they were soon filling every crevice with brood and nectar.

While my package was building up I had an intriguing experience, my first contact with a swarm. One afternoon my science teacher called me to report a swarm on his uncle's peach tree. Could I come and get them? And how! I called two fellow beginners to ask for equipment and help. We went out with a burlap bag and an eight frame hive with four drawn combs, all we had. The swarm was about the size of a hat, an Italian crossbreed apparently. Without a bobble we cut the limb and dropped the swarm in the bag, taking them to a friend's vacant lot to hive them. We left them there for several days to check for disease before moving them in by my colony.

Then the first difficulty came. I decided, since they were not of pure stock and the queen likely several seasons old, they should be requeened. When the Italian hybrid came I removed the old queen from the combs of solid brood and introduced the young queen in her cage. It must have been a week before she was released and after her first eggs the bees superseded her. How disappointing. It made me quite angry. I didn't want to let a bunch of insects outsmart me, so I promptly ordered a new queen and introduced her as before. The bees accepted her.

At night I had visions of pounds and supers of honey from my package and swarm. I ordered a new hive for the swarm and installed the bees in it. How could anyone think a bunch of insects would cause trouble? It was simple.

June 20th I left for a Youth Conference in Toronto, Canada. Since I would be gone a month and cotton would bloom early in July, I put an excluder and a shallow super on the package. When I returned, instead of a super filling with honey, I found a super with scarcely a bee in it and not a single frame which had been worked on. The bees had failed to go through the excluder and had swarmed. Mother had caught the swarm and with a friend's equipment had installed them in two shallow supers. But they were not satisfied. They clustered on the outside. Thinking they were hot Mother had put rocks under the cover and on the inner cover! The swarm promptly moved into the space between the two covers. When I got back there they were. So I shook them onto the foundation. But the next morning not a bee was there. Some had rejoined the parent colony and the rest had absconded. Then my philosophy began to change about beekeeping. It wasn't so easy after all.

In a few days I noticed that there was no brood in the package colony so I decided that it was queenless. In the face of this I united them with the weak swarm to make a double brood chamber hive. "Surely with this hive" I thought smugly, "those stupid bees will store a super of honey."

But in three weeks of no storage I decided that something must be wrong. I looked the colony over and there in plain sight was my package queen on combs with no pollen and no brood. I conferred with my two fellow beginners and they confirmed the fact. Their colonies had the same trouble.

While contemplating what to do, my fears were dissolved. After a rain the cotton, loaded with pollen, burst into bloom and the depleted colony was packed with nectar and pollen once more. Again filled with great expectations, I put on the supers but with no excluder. In a week one comb was drawn out but that was all. I waited patiently on the stubborn bees but with no results. By now the colony had honey, pollen, and brood in about eighty per cent of the cells. But I gave up hope for honey that year and began planning for the following one. Should I requeen in the fall? What about trying a two-queen colony? Should I forget excluders?

I figure in about five years I will really taste honey made by my own (stupid?) bees. If it takes fifty years I'll never give up. After all I've been bit. Maybe stung is a synonym that is more appropriate.

Stanton, Texas

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Science . . . .

Thuricide – A "Living Insecticide"

J. E. Eckert
University of California

I recently heard a representative of the Pacific Yeast Co., Wasco, California, speak to a meeting of beekeepers in Bakersfield on the subject of Thuricide, an insecticide that is harmful only to chewing larvae, such as the lepidopterous leaf-eaters. It is not harmful to adult bees, or other adult insects, including the predators of the larvae it kills. It is not injurious to fish, fowl or to warm-blooded animals and so need have no residue tolerance when applied to any form of plant.

What is it? In 1951 Dr. Steinhaus published on the possible use of *Bacillus thuringiensis* spores as an aid in the biological control of the alfalfa caterpillar. This bacterium had been isolated and described by Berliner in 1911 but very few species of insects were tested to determine their susceptibility until within the past decade. Dr. Steinhaus found that it would control the alfalfa caterpillar when applied under field conditions. Other research workers have reported on its killing power in connection with various lepidopterous larvae as well as larvae of other insects, and have investigated the effectiveness of certain strains of bacteria along similar lines. The bacteria were generally grown in the laboratory and many of the tests were on a rather restricted scale.

Within the past few years methods have been perfected to grow spores of *B. thuringiensis* by the ton, dry them and then process them with some diluent dust so the material could be applied either in dust form or when suspended in sprays. *Thuricide* is the name of the insecticide made by the Bioferm Company of Wasco, California, and consists of three billion spores to the gram. The Stauffer Chemical Company of California will process, test, and sell the pesticide when it is finally available for sale within the next year or so. At present it is undergoing detailed field tests against various insects in many portions of the United States, Hawaii, Puerto Rico and Australia. It looks promising that at last farmers may have a pesticide that is so specific that it will kill only lepidopterous larvae and will not injure bees or other beneficial insects. Since it is not injurious to other living animals, or plants, it can be sold and used without the need of any tolerance for the residue left on plants or any plant product.

Will this biological pesticide replace the toxic chemicals? No, because it does not affect the adults or nymphs of insects, injurious or otherwise, so chemical warfare will have to continue in the control of these pests. Thuricide may be substituted for certain toxic substances in the control of specific larvae against which it is most effective and at a time in the development of plants when the more toxic substances cannot be used. Unfortunately it is not toxic to aphids at any stage in their development. But it is a start along the right road of biological control and may result in the intensification of research for less toxic agents than the highly toxic materials now used.

It may be found that there are many limiting factors to the use of biological pesticides that are more exacting than the use of certain chemicals. Time and experience will prove the worth of the different pesticides and their relation to our general economy.

Edited by

Dr. Walter Rothenbuhler

Iowa State College

Queen Substance

Recent experiments conducted at Rothamsted Experiment Station (England) would indicate that the queen substance described earlier by Butler, and which, on the queen, inhibits queen production by a group of queenless workers, is produced by the mandibular glands of the queen bee. (Butler & Simpson)

Bleaching Beeswax

By Humberto Ibarra, P. Tomeo, and Julio A. De Castro.

Apicultor, amer. (Montivideo) *1*, No. 11/12/13: 15-19(1955); *Chem. Abstr.* 50: 7482h(1956).

The methods of production and extn. influence the quality and color of beeswax. A solar heat extractor extd. 20-50% but had the advantage of low operational cost. C_6H_6 was more suitable than EtOH or Et_2O for extg. up to 93.75% of the wax. Pollen and cerochromatin cause objectionable color (cerochromatin is a colloidal material synthesized in the presence of chlorophyl, having a nitrobenzene camphor group, and coagulable at 74° or fixed by absorption on protein). Bleaching by stirring a small stream of liquid wax into cold water, and

(Bottom of next Column)

HARLEY FROST WILSON

Dr. Farrar (Wisconsin) just sent an announcement of the passing of H. F. Wilson whom most of us, that knew him well, called "Prof Wilson." He was professor of Economic Entomology at the University of Wisconsin from 1915 to 1948. He became a leader in the beekeeping industry and fought against many odds for its advancement. We could always count on him for front line battles. He was born in Del Norte, Colorado in 1883 and received his scientific education at the Colorado Agricultural College, University of Illinois, and Oregon State College. After leaving Wisconsin he became director of research for Pickett and Eckel who design slide rules, computing devices and mathematical instruments.

At Wisconsin he established the Dr. Charles C. Miller Memorial Apicultural Library, which, with the Langstroth Library at Cornell in New York, are the two largest beekeeping libraries in the world.

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treatment with air and sunlight, Cl_2, $NaClO_2$, $HClO_3$ and borax, MnO_4 and SO_2, activated charcoal, and blood black was studied.

The Khegel bleaching method with Cl_2 or $NaClO_2$ was ineffective, but with $HClO_3$ it was excellent.

Dr. F. B. Wells
Pennsylvania

Treating E.F.B. with Disulfan

By R.I. Madatov, Regional Veterinary Lab., Alam-Ata, U.S.S.R.

Pchelovodstvo 29 No. 8, 46-7 (1952); *Bee World 39*, 53 (1958). - Heavy infection was cured by feeding 8 l. honey contg. 0.3 g. disulfan/1./ colony when there was no honey flow. During honey flows spraying frames with adhering bees with a soln. contg. 0.3 g. disulfan in 40 cc. 20% $NaHCO_3$ gave good results. Disulfan is not toxic to bees.

Dr. F. B. Wells
Pennsylvania

Other Items of Interest - -

Where To Get Pollen

There have been several inquiries about a source for pollen. Andre Prost, 150 Front St., New York 5, says that anyone seeking pollen should get in touch with him. From two reliable sources in France he has been receiving small quantities of pollen in recent months and much larger quantities may be obtained for anyone interested.

Giraud In France

We announce the death of Etienne Giraud in France, at the age of 86. He held many prominent offices in beekeeping societies and was honorary member of the National Apicultural Society of France. His was an eventful and worthy career in French beekeeping.

Mildred Hobart

The passing of Mildred Hobart of Gleanings is announced in the February number. She was with Gleanings for more than fifty years. Her father was foreman of the printing department for a long time. Mildred was in charge of advertising and she also served as proof reader and prepared the annual index.

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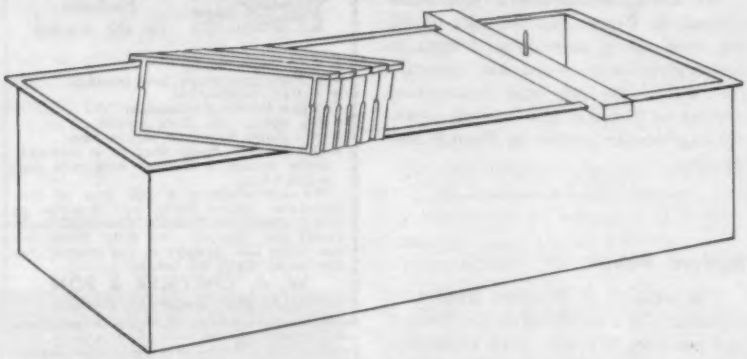

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What have you to trade?

Homer W. Richard
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— TOP NOTCH RECIPES —

A Contest — This *is* a contest. But—you folks did not get enough recipes in to carry out the plan of having Breads for March. So for the month let's fill with some institutional recipes. All of them have been tried in my kitchen. So come on with more Breads now for April. The whole scheduled line of recipes now moves forward one month. All recipes due at American Bee Journal the last day of the month. The rules are simple: write legibly when you enter this contest; give complete directions and exact measurements. Be sure to include your name and address on the recipe sheet. Include a brief statement about the origin of the recipe. Only one recipe on a sheet, please. The sender of the winning recipe will receive an eight and a half by eleven inch bordered and printed certificate suitable for framing, with the contestant's name and embodying the actual recipe. Also a three year subscription free to the Journal plus an illustrated and printed honey cook book. The number two contestant will get a one year subscription and the cook book; the third, a 6 month subscription and the cook book; the balance 4 months each.

Bran Peanut Butter Muffins

From A Sweet Combination Honey and Cereals, American Honey Institute

1 cup milk
1 cup whole bran cereal
5 tablespoons shortening
1 tablespoon honey
3 tablespoons peanut butter
1 egg
1 cup flour
3 teaspoons baking powder
¼ teaspoon salt

Pour milk over bran cereal; let stand 5 minutes. Cream shortening, honey and peanut butter together thoroughly. Add egg. Beat well. Add bran mixture. Sift flour, baking powder, salt, and add to bran mixture, stirring only until dampened. Fill greased muffin pans two-thirds full; bake in hot oven (400°) 25 minutes.

Yield 14 medium sized muffins. About 120 calories per muffin. Total recipe cost about 28c.

Very light and delicious!

Honey Flake Gems

From A Sweet Combination Honey and Cereals, American Honey Institute

1 cup sifted flour
1 teaspoon salt
3 teaspoons baking powder
1 egg
¼ cup honey
½ cup milk
4 tablespoons melted fat
2 cups wheat flakes or corn flakes

Sift flour, salt, and baking powder together. Beat egg until light, add honey and milk, and stir into dry ingredients being careful not to overmix. Add slightly-cooled fat and stir just enough to mix ingredients. Carefully fold in cereal flakes. Fill greased muffin cups two-thirds full. Bake about 25 minutes in a moderate oven (350°).

Yield: 12 small muffins. About 120 calories per muffin when with corn flakes. About 125 when wheat flakes are used. Total cost about 25c.

Very good with an interesting texture.

Honey Corn Bread

From Milk and Honey Treasures, American Honey Institute

1 cup sifted flour
3 teaspoons baking powder
1 teaspoon salt
1 cup yellow cornmeal
1 egg, slightly beaten
1 cup milk
¼ cup melted butter
3 tablespoons honey.

Mix and sift flour, baking powder and salt. Add cornmeal and mix thoroughly. Combine egg, milk, butter and honey. Pour into flour mixture and stir until just moistened. Pour into buttered pan, 9 x 9 x 1 ¾". Bake in hot oven (425°) for about 20 minutes. Serve hot.

Yield: Nine 3-inch squares. About 188 calories per large square. Total cost about 28c.

Very good, without the usual crumbs of corn bread. Toasts well.

Gingerbread

From Central Washington Beekeepers Assn. cooperating with State Dept. of Agriculture, Marketing Branch, Box 617, Yakima, Washington

2 cups sifted flour
2 teaspoons baking powder
1 teaspoon salt
½ teaspoon ginger
½ teaspoon cloves
½ teaspoon nutmeg
½ cup shortening
⅓ cup sugar
½ cup honey
2 eggs
¾ cup milk.

Combine first six ingredients and triple sift. Cream shortening. Add sugar and honey and beat well. Add ½ cup of sifted dry ingredients and mix thoroughly. Add beaten eggs. Add remainder of dry ingredients alternately with milk. Bake in a greased 9 x 9 inch pan about 35 - 40 minutes at 375°. Cut into 1½ inch squares.

Yield: 36 1½ inch squares. About 77 calories per square. Total cost about 40c.

Good and tasty. (Frankly the recipe wasn't as easy to follow as the ones from the Am. Honey Institute).

Honey Cinnamon Muffins

From Honey Flavor Harmonies, Extension Bulletin 213, January 1943, Michigan State College, Extension Division, East Lansing, Michigan.

2 cups sifted flour
1 teaspoon baking powder
½ teaspoon soda
½ teaspoon salt
1¼ teaspoons cinnamon
1 egg, well beaten
¼ cup honey
1 cup sour milk
3 tablespoons melted shortening.

Mix and sift all dry ingredients. Beat egg, add honey, milk and melted shortening and mix well. Add liquid ingredients to dry ingredients and stir just enough to mix, but not make a smooth batter. Turn into oiled muffin tins, filling ⅔ full. Bake in hot oven (400°) 15 to 20 minutes.

Yield: 12 muffins. Calories per muffin - about 135. Total cost about 24c.

Good flavor.

Suggested Contests

Now the classification of recipes is as follows: Breads for April; Cakes for May; Springtime Salads for June; Summer Drinks and Punches for July; Picnic Packing Cookie for August; Vegetables for Sept.; Meats for October; and Dieting Specialties for November.

You must get your recipes in about as soon as you read this because I have to try them and rate them and that takes time. If there are too many recipes for any one issue the classification may be continued the following month. Good luck to you——Pat.

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Industry Makers

Lorenzo Lorraine Langstroth

No other Industry Maker rises above the proportions of Rev. L. L. Langstroth. He was powerful in the pulpit and mighty in the bee yard. Without him the present day beekeeping industry might still be a primitive occupation. He just had to find out some way to make it easier to see what bees do inside their home. Fingering and peering from the bottoms of combs in box hives displeased him very much.

But he had a natural curiosity which led him to do and try things. So he studied the bee colony continually and the more he studied the nearer he approached a simple fact that had eluded everyone before him. Those bees always kept a certain space between their combs no matter where they built them. Also when the combs were that same space away from the hive parts they remained as separate and free waxen combs, not attached to the wood. So, he exclaimed "Eureka! I have found it."

So he had. He proceeded to fashion and patent a hive of wood with frames that maintained this bee space between each other and away from hive walls. Then, with a proper top and bottom, we had a hive for the very first time from which the combs in frames could be removed freely; a hive which, by the addition of one, or two or more bodies, served for brood nest and for honey storage.

And so Langstroth's hive has remained to this very day, with few important changes other than minor refinements, the standard hive of the beekeeping world. Strange that the size of the hive rested on the availability of lumber size. Had the local lumber distributor furnished a larger, or even a smaller width of lumber, the hive would have been made of a size to suit. Some believed the hive to be too large and that led to the shallow, or divisible brood chamber, hives whose diminutive size never allowed the bee colony to develop as it should or to enter winter with sufficient stores, even when the hive was used in multiples.

In contrast there were those like Quinby and Dadant who believed the Langstroth hive to be too small and they developed a larger hive which it

must be admitted was more suitable, with its larger combs, for the uninterrupted laying of the most prolific queens. Since then prolificness has changed and become greater, so a single "big" hive is no longer big enough. Some beekeepers use big hives in multiple with two or three hives for normal colony accommodation. Some use one big hive and shallow food chambers and shallow supers. Some use two big hives with a shallow food chamber in addition, on a reversal plan or a two-queen plan. Many beekeepers who prefer the standard Langstroth hive in multiple also prefer shallow supers because of the weight of honey filled standard supers.

Langstroth portico hives used shortly after the invention of the original hive.

So, since that day when Rev. Langstroth cried "Eureka" a whole industry has developed. With the advent of paved and gravelled roads and modern trucks and cars the beekeeping industry has exploded into a giant, as beekeeping goes, and commercial operators are to be found everywhere.

This issue of ABJ emphasizes pollination. Langstroth could not have seen ahead to present times and marvelled how his hive would become the basic tool of large scale pollination, a hive in which populous colonies could be moved overnight onto big farms to set seed or fruit; to give us apples, berries, vegetables, clover seed; to make possible crop improvements that would result in the control of quality and that would concentrate pollination ventures in regions where thousands of bee colonies are operated with pollination as the main objective and where a lasting partnership is developing between farmers and beekeepers that opens a new agricultural concept the importance of which we have only just begun to visualize.

What about Supersedure?

James E. Davis, Jr., of Navasota, Texas thinks that readers should give their ideas about what causes supersedure. He sends his own ideas too but let's get some points to be considered along with his from some other readers. Send your contribution to this problem to the Journal.

Well, Now We Know

Remember the picture with the "Getting Together" heading on page 24 of the January number? We had no idea who sent in the original. Seems it was Carl M. Teasley, Ocoee, Tenn. He says it was taken at the home of a 68 year old beekeeper in Varnell Station, Georgia, while bees were being transferred. Lee Henderson of Dalton and F. O. Bishop of Chattanooga are in the picture.

Let's Get Together

California Bee Breeders Meet

The Annual Spring Business Meeting of the California Bee Breeders, Inc. was held on the University Campus at Davis, Friday, January 23. The all day meeting was taken up with the discussion of the improvement of honey-bee stock and the bee breeding program carried on at the University. Fred Ryon of Durham was elected president, Howard Foster of Colusa was elected vice-president, and M. C. West of Winters was re-elected secretary-treasurer.

The organization is state-wide with the majority of the fifty members living in the Sacramento Valley. It was established in 1933 to promote and encourage the production of quality bees and queens for the betterment of the bee industry.

M. C. West
Secretary

Midwestern, Kansas City, March 8

The Midwestern Association will hold its regular monthly meeting at the I.O.O.F. Hall, 812 Westport Road, Kansas City, Missouri, at 2:30 P.M., Sunday, March 8. On the agenda is a talk on "Stimulative Feeding," the movie "Bees for Hire," and the usual refreshments. Everyone welcome.

Carroll L. Barrett
Secretary

South-East Minnesota, Zumbrota, April 4th

The South-East Minnesota Association will hold its spring meeting at the REA Hall at Zumbrota, Minn., Saturday evening, April 4th.

Curtis Olson is in charge of the program and promises a very instructive meeting with demonstrations and talks by the outstanding members of the organization. Honey promotion and baking contests will be dealt with by an authority on these subjects. No names mentioned. So come and find out who is on the program and how to take some important short-cuts in present day beekeeping. All beekeepers are welcome.

F. Q. (Quint) Bunch
Secretary

Middlesex County (Mass.), Waltham, March 28th

The March supper meeting of the Middlesex County Association will be Saturday evening the 28th at the Waltham Field Station at 6:30.

A talk on "First Lessons in Beekeeping" will be given accompanied by slides from the Audio-Visual Center of the University of Massachusetts, Amherst, Mass.

The symposium on "American Foulbrood Treatment and Disposal" at our February meeting brought out several important views of some of our most experienced members. It is planned to hold more symposiums on vital factors of beekeeping.

M. Southwick
Secretary

Texas Association Officers

The newly elected officers are W. L. Atkins, president; C. S. Engle, vice-president; and Claud J. Burgin, secretary-treasurer. Roy S. Weaver, Sr., was reelected director-at-large, and G. C. Walker, Jr., and G. O. Stroope were designated to represent the Texas Beekeepers Association at the national meetings at Tampa, Florida, Hillsboro Hotel, January 27 to 30, inclusive.

Nebraska Officers

The new officers of the Nebraska State Association for 1959 are Charles Moosman, president; Robert Sidwell, vice-president; Mrs. Charles Bellin, sec.treas.

Wisconsin State Southern District Janesville, March 14th

The Southern District of the Wisconsin State Association will hold its meeting at the Court House in Janesville, Saturday, March 14th. The tentative program is as follows:

10:00 Opening of the meeting by District Chairman B. E. Gerstner

10:15 John Long, Inspection report and Abbott Laboratories experiments with Fumidil B last spring.

10:45 Marcus Osborn of Beloit on State Honey Queen program for the coming year.

11:00 Dr. Roger Hoopingarner, a former student of Dr. Farrar, along with Emmett Harp of the North Central State Bee Laboratory.

11:30 Business meeting.

12:00 Pot Luck dinner. Please bring a dish to pass. Ham will be furnished by the district.

1:15 R. Shadley of 746 5th Ave., Belvidere, Ill.

1:30 Art Kehl of Dadant & Sons Watertown, Wis. Grading & Color of Honey; Midnite and Starline Bees.

2:00 Hugh Aberts Co. Agent of Rock Co., Roadside Spraying.

2:15 Henry Piechowski, Red Granite, State Association President, State Association affairs, slides of the State Honey Queen demonstration held in Appleton last October.

2:45 Discussion period. Door prizes.

B. E. Gerstner, Chairman
Lake Mills, Wis.

Third Annual Texas Beekeeping School - April 4th

Queens! What every beekeeper should know about them. The best ways to introduce and handle them. These and many other queen handling tips will be revealed at the third annual beekeeping school, 1-5 p.m., Saturday, April 4th in the offices of the Root Company, 537 S. Flores Street, San Antonio, Texas.

This year the entire program will be related to queens, the theme of the sessions, according to Roland Sykes, Chairman of the School. A fast moving schedule, starting with a delightful 30 minute sound and color beekeeping movie, will also feature talks on honey plants, package bees and colony management by experienced beekeepers.

Mr. Sykes has also planned a beekeeping movie sneak preview of a special 30 minute television movie on bees and beekeeping. The film will be one of the highlights of the program.

Plan now to attend this unusual type of bee meeting. Bring along a friend. Prizes will be offered with a package of Weaver's Caucasians bees and a complete hive as the grand prize.

Walter Barth
San Antonio, Texas

National Honey Show Winners

Row upon row, 60 feet long, of glistening jars of honey greeted the eyes of visitors to the Florida State Fair at Tampa February 3 to 8, 1959. Sixty-six exhibitors from many states and Canada had brought or sent from one to ten entries to the Second National Honey Show held at this fair. Many beekeepers attending the convention of the American Beekeepers Federation stayed over to see the show and the weatherman cooperated by greeting them with near-perfect warm weather. Show superintendent, Fred Oren, had lined the shelves with aluminum foil which added to the attractiveness of the honey.

Special Award Winners

Sweepstake Trophy winner for highest number of points in the show - The American Beekeeping Federation Silver Trophy to Henry F. Puppe, Nebraska City, Neb.

Special Award of Merit - purple rosette ribbon for the best exhibit of clover honey to A. Stuart Bird of Edmonton, Canada.

R. B. Willson Silver Trophy for best 12 jars of clover honey to Henry Puppe, Nebraska City, Neb.

A. G. Woodman Co. Silver Trophy for best light honey other than clover to E. Wilson, Cumberland, Md.

W. F. Straub Co. Silver Trophy for best exhibit of golden colored honey to Harold Struthers, Lake Wales, Fla.

Superior Honey Co. Silver Trophy for best amber honey to Paul G. Cummins, Conshohocken, Pa.

American Beekeeping Federation Silver Trophy for best dark colored honey, to Henry F. Puppe, Nebraska City, Neb.

A. I. Root Co. Silver Trophy for best comb honey to Merlin Grant, Preston, Minn.

The Diamond Gardner Corp. Silver Trophy for best jars with chunk honey, The Bee Tree Honey Apiary, Raytown, Mo.

American Beekeeping Federation Silver Trophy for best granulated honey to Edward Jax, Austin, Minnesota.

The Dadant Silver Trophy for best five pounds of beeswax to Fern E. Wilson, Cumberland, Md.

American Honey Institute Silver Trophy for exhibit scoring highest number of points in Honey Use Exhibit: Mrs. A. H. Parks, Tampa, Fla.

Honey Class Winners

Clover Honey: 1st prize: Henry F. Puppe, Nebraska City, Neb.; 2nd prize: George Luthe, Lansing, Minn.; 3rd: Curtis Olson, Zumbrota, Minn.; 4th prize: David Phillips, Clearwater, Fla.; 5th prize: Walter Fleigner, Riverton, Wyo.; 6th prize: Stoller Honey Farm, Latty, Ohio.

Light Honey - Not Clover: 1st prize: E. Wilson, Cumberland, Md.; 2nd Prize: A. W. Gubert, Inkster, Mich.; 3rd prize: Helen's Apiaries, Welch, Minn.; 4th prize: W. Grant Hastings, Mesa, Ariz.; 5th prize: Conrad Cramer, Sharpes, Fla.; 6th prize: Frank Robinson, Gainsville, Fla.

Golden Colored Honey: 1st prize: Harold Struthers, Lake Wales, Fla.; 2nd prize: Nordman Bros. Deland, Fla.; 3rd prize: Curtis Olson, Zumbrota, Minn.; 4th prize: Frank Nick, Sr., Mt. Clemmens, Mich.; 5th prize: C. Wade, Tampa, Fla.; 6th prize: T. D. Manchester & Son, Middlebury, Vt.

Amber Colored Honey: 1st prize Paul G. Cummins, Conshohocken, Pa.; 2nd: Nick Frank, Sr., Mt. Clemens, Mich., 3rd prize: Cecil Hoff, Eau Gallie, Fla.; 4th prize: Bee Tree Honey Apiary, Raytown, Mo.; 5th prize: Henry F. Puppe, Nebraska City, Neb.; 6th prize: Harold Struthers, Lake Wales, Fla.

Kay Seidelman (at left), Ionia, Michigan, voted "Miss American Honey Queen" for 1959 at the Florida convention of the American Beekeeping Federation. She presents the mermaid "honies" Tammy Auld and Nell Nichols, of the Weeki Wachee under-water show (Brooksville, Florida) with honey samples.

Dark Colored Honey: 1st prize: Henry F. Puppe, Nebraska City, Neb.; 2nd prize: J. W. McNeil, Hackettstown, N. J.; 3rd prize: Norman Harper, Belleville, Wis.; 4th prize: Nick Frank, Mt. Clemmens, Mich.; 5th prize: Geo. Seidelman, Iona, Mich.; 6th prize: David Phillips, Clearwater, Fla.

Comb Honey: 1st prize: Merlin Grant, Preston, Minn.; 2nd prize: Harold Struthers, Lake Wales, Fla.; 3rd: John A. Larsen, Taylor Falls, Minn.; 4th: Norman Harper, Belleville, Wis.; 5th: Helen's Apiaries, Welch, Minn.; 6th: Bee Tree Honey Apiary, Raytown, Mo.

Chunk Honey in Jars: 1st: Bee Tree Honey Apiary, Raytown, Mo.; 2nd: Floyd C. Markham, Belle Glade, Fla.; 3rd: Conrad Cramer, Sharpes, Fla.; 4th: Cecil Hoff, Eau Gallie, Fla.; 5th: John A. Larsen, Taylor Falls, Minn.; 6th: Curtis Olsen, Zumbrota, Minn.

Granulated Honey in Jars: 1st: Edward Jax, Austin, Minn.; 2nd Bee Tree Apiary, Raytown, Minn.; 3rd: Mrs. C. D. Castle, Manitoba, Canada.; 4th: Helen's Apiaries, Welch, Minn.; 5th: Paul G. Cummins, Conshohocken, Pa.; 6th: John A. Larsen, Taylor Falls, Minn.

Beeswax, 5 lbs.: 1st prize: Fern E. Wilson, Cumberland, Md.; 2nd: Norman Harper, Belleville, Wis.; 3rd: Bee Tree Honey Apiary, Raytown, Mo.; 4th: John A. Larsen, Taylor Falls, Minn.; 5th: Henry F. Puppe, Nebraska City, Neb.; 6th: George Seidelman, Iona, Mich.

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Chicago 12, Ill.

Dadants' Midnite Hybrids

2 lb. packages $4.80
3 lb. packages 6.00
4 lb. packages 7.20
Queens—$1.75 each - add 10c for marking and clipping

CARNIOLANS & CAUCASIANS
2 lb. packages $4.50
3 lb. packages 5.70
4 lb. packages 6.90
Queens $1.40 each

J. L. O'Ferrell & Sons
409 O'Ferrell St. Greensboro, N. Car.
and La Belle, Fla.

ITALIAN BEES AND QUEENS
2 lb. w/q—$3.50 3 lb. w/q—$4.20
4 lb. w/q—$5.10 Extra queens $1.15
For queenless pkg. deduct price of queen
Live delivery and health certificate guaranteed. 10% cash books your order
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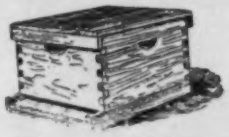
HESSMER LA.



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Italian Package Bees and Queens For 1959
Truck loads a specialty. Nuclei made to order. Caucasian and Italian queens.
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for the beekeeper's shop.
Write for details.
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Send for FREE Circulars
Booking orders now.
Over 30 years a shipper.
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A Sample Copy
"Gleanings in Bee Culture"
Look it Over — You Will Like It
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American Bee Journal
Hamilton, Illinois

Honey Use Exhibit

Cake (25% honey): 1st prize: Mrs. A. H. Parks, Tampa, Fla.; 2nd: Johanna Schultz, Tampa, Fla.; 3rd: Mrs. Cliff Neese, Tampa, Fla.; 4th: Rose Hitchman, Lutz, Fla.; 5th: M. T. Goodale, Tampa, Fla.; 6th: Dorothy Hitchman, Luts, Fla.

Cookies - 12: 1st prize: Mrs. A. H. Parks, Tampa, Fla.; 2nd: Marian Black, Lowell, Ind.; 3rd:: Barbara Phillips, Clearwater, Fla.; 4th: Dorothy Hitchman, Lutz, Fla.; 5th: Helen's Apiaries, Welch, Minn.; 6th: Mrs. Cliff Neese, Tampa, Fla.

Candy and Confections: 1st: Helen's Apiaries, Welch, Minn.; 2nd: M. T. Goodale, Tampa, Fla.; 3rd: Cecil Hoff, Eau Gallie, Fla.; 4th: Mrs. A. H. Parks, Tampa, Fla.; 5th: Mrs. Cliff Neese, Tampa, Fla.; 6th: C. A. Bird, Edmonton, Canada.

By H. J. Rahmlow, St. Petersburg, Fla.

American Beekeeping Federation Activities

by Joseph Moffett
Secretary, ABF

The highlight of Federation activities the past month was the annual meeting at the Hillsboro Hotel in Tampa, Florida. Several hundred beekeepers met to listen to speeches, meet old friends, exchange ideas, and help plan future Federation activities.

The old saying, "I can't afford not to go to bee meetings" and "I can tell you what I learned at a meeting, but I can't give you the 'glow' or 'feeling of renewed enthusiasm' that you get from attending a meeting," was true.

Two days after the meeting, our president left for Washington to discuss the problems of the bee industry with Secretary of Agriculture Ezra Taft Benson. President Budge is asking the USDA to divert surplus honey to the school lunch program and to institutions. He is also asking for an export subsidy of two and one-half cents a pound.

Kay Seidelman of Iona, Michigan was chosen as the National Honey Queen at Tampa. Her picture was carried in several papers, and the bee industry received much publicity from the Honey Queen Contest.

The Federation office is being moved from Cannon Falls, Minnesota to 115 South College Avenue, Fort Collins, Colorado.

A decal for car or truck windows will be mailed to each Federation member when he pays his dues. Our goal in 1959 is 2,000 members.

Check-off plan starts to roll

The check-off plan is starting to roll. During 1958 four of the nation's largest private packers automatically deducted a cent from the producer's check for each sixty pounds of honey produced. These packers added an equal amount of their own money. The producer could obtain his money back by asking for it in writing. One packer reported that only one beekeeper out of the 175 from which they bought honey requested a return of the money.

Many other packers contributed when the producers requested it. Producer-packers should contribute two cents for each 60-pound of their own honey that they pack. Let's all get on the band wagon and help make the check-off plan a big success.

6,000 booklets to be sent to bakers. What is the Honey Industry Council doing with this money? First, $1200 has been spent for the printing of 6,000 booklets for distribution to the baking industry. These booklets are being prepared by home economists at Kansas State College. In connection with this booklet, Kansas State College will send 100,000 pamphlets concerning honey to housewives without charge to the bee industry.

A research contract has been signed with the University of Wisconsin. This study is to determine where the fat from different sweetening agents, such as honey, sugar, sirup, etc., is stored in the body.

Some of this money is being used to employ additional help at the American Honey Institute to conduct promotional work under the supervision of the Council.

It is hoped that the Council can also sponsor personal appearances of the National Honey Queen.

Tampa Resolutions

Here are digests of important resolutions adopted by the Federation in Tampa, sent in by Joe Moffett, newly elected secretary:

Since the acarine mite is a potential threat to beekeeping in North America, the Federation endorses a resolution by the Apiary Inspectors of America that Byron T. Shaw, administrator of the Agricultural Research Service, be requested to take whatever measures are necessary to conduct a survey for the presence of the mite and to bring a technician from Europe to help our officials in diagnosis. The Apiary Inspectors agree to cooperate in obtaining field samples. Further, that suitable personnel be sent to Europe to study the techniques of control. If the planned survey and training is completed, consideration would then be given to requests for importation of foreign stock.

(Continued in April)

Italian QUEENS BEES

Large, Vigorous Queens
Overweight Packages
Shipped on time.

2-lb. pkg. w/q. . . $3.75 F.O.B. express
3-lb. pkg. w/q. . . 4.75 F.O.B. express
Queens . . . . . 1.20 pp

If packages wanted by parcel post, add $1.25 for the 2 lb. and $1.50 for 3 lb. pkgs.

Sunrise Apiaries

Petal **Mississippi**

ITALIAN QUEENS AND PACKAGES

All queens are No. 1 quality of our own breeding.
Prompt, efficient service.

	1 to 10	11 to 50	51-up
2-lb. pkg. with queen	$4.50	$4.25	$4.00
3-lb. pkg. with queen	5.70	5.45	5.20
4-lb. pkg. with queen	6.90	6.65	6.40
5-lb. pkg. with queen	8.10	7.85	7.60
Queens	1.45	1.35	1.25
Tested Queens	2.50		

Our Express rates and schedules remain unchanged from last year.

W. E. PLANT **Hattiesburg, Mississippi**

25 cents for 8 - 9 oz.

of your honey in our plastic comb honey section

COBANA PROD. CO.

P.O. Box 214 Dearborn 1, Mich.

Italian Bees and Queens

Dadant's Starline —	1 to 25	Our Regular Stock 25 to 100	100 up
2 lb. package with queen	$4.50	$4.25	$4.00
3 lb. package with queen	5.70	5.45	5.20

For larger packages add $1.10 per pound. P. P. Packages add $1.50 per pkg.

Untested queens	1.45	1.35	1.25
Tested queens	2.50		

The prices are for regular stock, so add 30c per package or queen for Dadant's Starline. The stock that makes the honey and very gentle.

Royal Jelly shipped anywhere. Write for prices.
Shipment of bees and queens start March 1st. Satisfaction Guaranteed.

Alamance Bee Company

Geo. E. Curtis & Sons La Belle, Fla. Box 525

Bright Three Banded Italian Package

BEES AND QUEENS

Our Mott strain is the very best

Queens 1 to 49—$1.25; 50 or more $1.10; 2 lb. packages 1 to 49—$4.50; 50 or up—$4.25; 3 lb. pkgs. 1 to 49—$5.50. 50 up—$5.25.

Packages F.O.B. shipping point. Queens prepaid. Write for circular. We guarantee safe delivery.

TAYLOR APIARIES

P. O. Box 249 Luverne, Ala.

CALIFORNIA CAUCASIANS

Gentle and Industrious Caucasian queens. Hastings strain used for breeders. Bred for greater honey production, Gentleness, Highly prolific, No excessive propolis, Swarm control and Color. Some package bees. 10% books your order - balance due two weeks prior to shipment. Air Mail. Ready to ship about April 1. Wo do not clip or mark.

1 to 24	$1.50
25 to 99	1.35
100 and up	1.20

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Don J. Strachan **Yuba City, Calif.**

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BETTER BRED QUEENS

Three Banded Italians

Now is the time — this is the place. Better Bred Queens and Bees is the stock. Help yourself and us too, by booking early.

	Queens	2 lb. w/q	3 lb. w/q
1 to 24	$1.40	$4.25	$5.35
25 to 100	1.15	3.75	4.75

CALVERT APIARIES Calvert, Alabama

WILLIAMS ITALIAN QUEENS
Large Leather-Colored Three-Banded
QUALITY SUPREME
Certificate with each shipment
1-9 Air Mail ..... 1.25 each
10-99 Air Mail ..... 1.15 each
100 Up Air Mail .... 1.05 each

DR. WILLIAMS APIARIES
115 W. Sterling St. Baytown, Texas

YELLOW ITALIAN BEES AND QUEENS

2 lb. bees with queen $3.50; 3 lb. bees with queen $4.50; Queens $1.00 ea.
Dadant's Starline Hybrid Queens—
1 to 24 $1.70 ea.; 25 to 99 $1.60 ea.; 100 and above $1.50 ea.

We guarantee live arrival and health certificate.

ALVIN J. DUCOTE **Hamburg, Louisiana**

The Stover Apiaries

PACKAGE BEES

Italians **Caucasians**

Sorry we are all booked up for April delivery but can supply you good package bees and queens in May and June.

Deal with one of the oldest, largest shippers of bees and queens in the United States and you won't be sorry.

PRICES

Lots of	Queens	2 lb. & Q.	3 lb. & Q.	4 lb. & Q.	5 lb. & Q.
1 - 24	$1.50	$4.25	$5.35	$6.45	$7.55
25 - 99	1.40	4.00	5.05	6.10	7.15
100 - 499	1.30	3.75	4.75	5.75	6.75

TESTED QUEENS $2.50 EACH

The Stover Apiaries, Mayhew, Miss.

"Bee Wise — Woodmanise Your Bee Supplies"

A. G. Woodman Co. **Grand Rapids 4, Mich.**

(Send for catalog—350 Listings)

POLLEN

Help the Bees Help You Produce a Full Crop with the Beehive Insert!

POLLENS—Apple, Cherry, Pear, Plum, Walnut, Almond, etc. for all methods of application.

Methods of Application:
- Hand Brush
- Hand & Pole Duster
- Airplane and speed sprayers
- Beehive Inserts

Harwood-Antles Beehive Insert (available in two lengths)

Antles' Pollens are Certified for Variety and Location of Gathering and Certified for Life and Gram Weight of actual Pollen Grains per ounce.

Ask About POLLEN GOLD. A natural Vitamin-Mineral Food Supplement. Get your vitamins the natural, tasty way!

LEO C. ANTLES, B.S., M.S. (Successful Orchardist)

FRUIT TREE POLLEN SUPPLIES CO.

P.O. BOX 1243 — WENATCHEE, WASHINGTON — PHONES No. 2-2905 or 2-6052

Gentle highly productive
CLOVERLINE CAUCASIANS

Hardy vigorous 3 banded
CLOVERLINE ITALIANS

1959 PRICES

Choice of ITALIANS or CAUCASIANS

Quantity	Queens only	2 lb. Package with queen	3 lb. Package with queen	4 lb. Package with queen	5 lb. Package with queen
1-9	$ 1.70	$ 4.50	$ 5.50	$ 6.50	$ 7.50
10-49	1.60	4.00	5.00	6.00	7.00
50-99	1.55	3.85	4.85	5.85	6.85
100 and over	1.50	3.75	4.75	5.75	6.75

We sell GOOD BEES specifically developed for heavy honey production, one grade only, CROSS BRED CLOVERLINES.

We have no disease and all our apiaries are government inspected. Certificate of Health and Directions for Handling come with every shipment. Live delivery and complete satisfaction guaranteed. Your choice of shipment via Express Collect, Parcel Post or your truck.

If Parcel Post is desired, please include sufficient remittance to cover postage and required special handling. For exact postal charges, see our ad in the February issue of this journal or upon receipt of your order we will advise the exact amount required.

Shipping Season from April 1st to May 20th

Cloverline Apiaries are one of the largest independent honey producers in the U. S., and the bees and queens that we sell are the same as we ourselves use. Cloverline packages are produced and shipped to the rigid specifications required for intensive and successful heavy commercial production.

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BEGINNERS NEEDS; Nuclei of bees in screened hives $12.00, with super or bee veil $15.00. Some cheaper. Write stating requirements. Prompt reply. Will also have bees for pollination service. Walter Hamilton, 3223-37 Ave. S., Minneapolis Minnesota.

GOLDEN ITALIAN QUEENS. Bees very large and gentle. Heavy honey producers. $1.00 each. Guaranteed live arrival and health certificate. Allen H. Gauthier, Hamburg, La.

DARK ITALIANS bred for production. 3 lb. pkg. bees with queens $4.50. April sold out. Queens now $1.40. Breeder queens $4.00. Henry Loehr, Caldwell, Texas.

QUEEN BEES 1959. Walker, Rt. 2, Box 338, Vacaville, California.

DARK 3 BAND Italians bred for honey production. Queens $1.25 each 100 or more $1.10 each. Leo Kretzschmar, 701 E. State St., Eagle Lake, Texas.

ITALIANS—Packages, Queens. Martz, Rt. A2, Box 846, Vacaville, California.

CARNIOLAN-CAUCASIAN: 2 lb. pkg. $4.00 each, 3 lb. pkg., $5.00 each, untested queens, $1.00 each. Booking orders for April, May 1959. Tillery Brothers, Rt. 3, Greenville, Ala.

ITALIAN QUEENS by Air Mail - 1 to 24, $1.40 each; 25 - 49, $1.30; 50 up, $1.20. Altamaha Apiaries, Gardi, Georgia. Telephone Jesup, Garden 7-3689.

BRIGHT ITALIANS 3 lb. with queen, $4.90; 2 lb. with queen, $4.25; f.o.b. Queens $1.25, P.P. Sheppard Apiaries, Aberdeen, N. C.

THE GOLDEN APIARIES Italian bees - 3 lbs. with untested queen, $4.40 each; 4 lbs. with untested queen, $5.40 each. Queenless packages, deduct 80c per package. Live delivery and a health certificate with shipment. Maurice Roy, Hessmer, Louisiana.

WILL SHIP BEES in your cages seventy cents pound after May 15th. Can supply new cages. A. V. Dowling, Valdosta, Ga.

3-BAND ITALIAN and Carniolan bees - 3 lbs. with queen, $5.00; 5 lbs., $6.80. Queens $1.25. Luther Pickett, Efland, N. C.

FOR SALE - Queens, Carniolan or Caucasian, $1.00 each. Shipment starts about May the first. A few packages at $4.50, 3 lbs. with queen. Roy Waddell, Rt. 3, Woodruff, S. C.

FOR SALE - Queens, personally reared; 1 - 9, $1.20; 10 - 49, $1.00. Health certificate, prompt service. Every queen a producer. Guaranteed to be shipped on shipping date. Add 5c extra for Air Mail. M. D. Sawyer, 206 Pershing Hwy., Bunkie, La.

Copy for the department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rate of Classified advertising — 16 cents for each word, letter, figure or initial, including the name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

FOR SALE

FOR SALE - 40 colonies in 2 bodies, supers and equipment for 75. Ralph W. Yerkes, Howell, Mich.

SAVE, BUY DIRECT from factory white pine supers standard dovetail construction 9-5/8" depth $1.20 6-5/8" depth 95c quantity discount. Kehm Bros. Apiaries, Airport Bldg. T-112 Mailing address, 222 East 7th, Grand Island, Nebraska.

FOR SALE: 5 hundred new shallow frames, one Reistle Foundation Maker and fifty clean Dadant Super-rims. "Will Prepay" exchange for bees, eighty large, seventy small shipping cages with bright cans. Wanted large extractor, Merry-Go-Round and floor dollies. W. Hamilton, 3223-37 Ave. S., Minneapolis, Minnesota.

UNUSUAL OPPORTUNITY-Selling because of health. 10-frame equipment for over 1300 colonies excellent condition. Includes complete extracting plant with or without honey house and bee locations. Cash or terms. Write to RS c/o American Bee Journal.

190 COLONIES 2 stories 10, most with excluders, D. M. and superior quality hives, 2 and 3 years old. H. G. Dunn, Box 9929, Dublin Blvd., Hayward, Calif.

100 or more 1 or 2 story hives Italian bees heavy with honey. Clyde Cobb, Enloe, Texas.

FOR SALE: 10 colonies of bees, new hives inspected. No deliveries. Harold Kubly, Rock City, Illinois.

FOR SALE: Going out of business account ill health. Bees, extractors, tanks, supers, etc. See or write Wm. H. Lynch, 601 Glenn Avenue, Marseilles, Illinois.

38-10 frame supers, 49-10 frame comb extracting supers, 1 capping basket tank, 1 storage tank 1 small extractor and other bee supplies all for $135.00. H. W. Schumacher, 305 Bertram St., Metamora, Ill. Tel. EM 7-4783.

APIARY FOR SALE: In San Luis Valley. 40 acres leveled, irrigated land, well fenced. Large honey house well equipped. 7 room modern house. Mrs. H. B. Norvell, Center, Colorado.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

FOR SALE: Royal Jelly. Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, Calif.

ROYAL JELLY capsules (with added vitamins) 25 mg. box of 30, $2.15, 50 mg. box of 30, $3.50. New pack (without vitamins) $7.50 per 100. Beauty Cream 2 Oz. $2.00. Prairie View Honey Co., 12303 Twelfth St., Detroit 6, Michigan.

FREE CATALOG: Cypress Bee Hives and bee supplies. Save up to 40% on hives that last for less. Myers Craft Manufacturing Co., Burgaw, North Carolina.

HONEY FOR SALE

LARGE QUANTITY light amber unheated honey in steel drums with removable heads. York Bee Company, Jesup, Ga.

WHITE CLOVER HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pa.

FOR SALE - Clover honey in 60 lb. cans. Ray Johnson, Princeville, Ill.

HONEY and BEESWAX WANTED

WANT CARLOAD or truck loads of water white, white, and amber honey. Also sage honey. Mail samples and quote. Maxwell's, Berryville, Virginia.

WANTED—extra white, white and light amber honey in 60 lb. cans. Cloverdale Honey Co., Fredonia, New York.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Mich.

HONEY AND Beeswax wanted. Melford Olson Honey Co., 5201 Douglas Drive, Minneapolis 22, Minnesota.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Clarkson, Ky.

HIGHEST PRICES paid for honey in all grades. send samples. Schultz Honey Farms, Ripon, Wisconsin.

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WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments, save 20% WALTER T. KELLEY CO., CLARKSON, KY.

WANTED

WANTED MORE Bee Supply & Package Bee Dealers. Can you qualify? Please write. Hubbard Apiaries, Onsted, Michigan.

WE have several calls for out of print American Honey Plants Books by Frank C. Pellett. If you have copies and want to dispose of them please get in touch with us. American Bee Journal, Hamilton, Illinois.

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HONEY PLANTS—Catalog on request. Try these UNUSUAL NECTAR YIELDERS: VITEX negundo, shrub, 4 plants $2.50; BEE BEE TREE 2 plants $2.50; one packet seed each five unusual honey plants $1.00; postpaid. PELLETT GARDENS, Atlantic, Iowa.

POSITIONS and HELP WANTED

WANTED 2 men to work in our apiaries, 5 day work week, top wages, bonus, other advantages. Schultz Honey Farms, Ripon, Wisconsin.

WANTED EXPERIENCED bee man for season in Colorado. Would consider selling or leasing to right man on percentage basis. Aikin Apiaries, Box 193, Loveland, Colorado.

QUALIFIED BEEKEEPER to manage entire apiary for percentage of crop plus salary. Northern operation preferred. Doug List 5251 North 7th St., Phoenix, Arizona.

HELP WANTED—Seasonal, year around. Experienced or inexperienced. In Texas, North Dakota. Stewart Apiaries, Fairfax, Missouri.

WANTED: Beekeeper for our package and queen yards. Give full information in first letter. Howard Weaver, Navasota, Texas.

WANTED - Experienced or inexperienced man for Louisiana and South Dakota. Lionel Hopkins, Maringouin, La.

WANTED - Two young men to help through the package season, March 15 to May 10 or later. Chance for permanent position for one. Modern equipment, good working hours, good pay. Give full information, age, experience, etc., in first letter. H. C. Short, Fitzpatrick, Ala.

MISCELLANEOUS

LET US explain our Finance Plan for Package Bees and Supplies, including Hooked Wired Foundation. Hubbard Apiaries, Onsted, Michigan.

SENSATIONAL GARDEN TRACTOR. Hoes between plants and rows including strawberries. Eliminates hand hoeing. Standard in size, yet entirely different. Patent 2742840. Also tills. Fantastic offer to first few inquiries. Auto Hoe, DePere 80, Wisconsin.

THE AUSTRALASIAN BEEKEEPER — The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd., Box 20, P.O. Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M.O.18/-(approx. $2.15) per year, post free. Sample copy free on request.

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information of range sheep than any magazine published. Subscription 1 yr., $3.00; sample copy 25c. Box 189, San Angelo, Texas.

BEES REMOVED FROM house or tree to hive without touching either house or bees. Bees will then move honey into hive. Save property, honey and bees with my method. Send $2 for details. Satisfaction guaranteed. George Hawkins, Rt. 1, Lawson, Mo.

Know interesting facts concerning the honey bees of India through the Indian Bee Journal, the only Bee Journal of India, published monthly in English. Subs. Rs. 12/-or Sh.17/6d(Sterling) or $2.75 per year per International M.O. Sample copy 2s/ or 25 cents. Can be had from: The Bhupen Apiaries (Himalayas), Ramgarh, Dist. Nainital,U.P., India.

1958 edition our 112 page book *HOW TO KEEP BEES AND SELL HONEY* CONTAINS OVER 175 CLEAR, SHARP PICTURES, EXPLAINS IN EASY TO READ STYLE ALL YOU NEED TO KNOW TO MAKE BEEKEEPING PLEASANT AND PROFITABLE. INCLUDES HITHERTO SECRET INFORMATION ON HOW TO BUILD HOT ROOMS TO LIQUEFY HONEY OVER NIGHT, HOW TO PREPARE WAX FOR MARKET AND FAIR DISPLAYS AND HOW TO MAKE CREAMED HONEY. 75c postpaid. Walter T. Kelley Co., Clarkson, Kentucky.

FOR LEASE - 1,000 colonies bees on share basis, 7,000 boxes, complete extraction equipment and trucks. Box JH, c/o American Bee Journal.

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Italians ***Caucasians***

PACKAGE BEES

	1 - 24	25 - 99	100 up
2 lb. pkg. with queen	$3.90	$3.80	$3.75
3 lb. pkg. with queen	4.90	4.80	4.75
Nice large queens	1.25	1.20	1.05

Clip and mark queens 10c each extra

Early March Queens

All queens are personally reared.

Will be glad to load your TRUCK with packages, ship express, or parcel post.

Send your order of 1 or 1000

MITCHELL'S APIARIES **Bunkie, La.**

LEATHER ITALIAN BEES & QUEENS

2 lb. Package of Bees with Queen.....$3.50

3 lb. Package of Bees with Queen..... 4.50

EXPRESS COLLECT

Queen - 1 to 100.....$1.00 each

100 up..... .90 each

Satisfaction Guaranteed.

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We are proud to announce that we have added

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ITALIAN QUEENS
which we have developed during a 32-year breeding program.

With 9000 nuclei, 2 good queen men and the cooperation of our weatherman we will have plenty of queens at the following prices:

April 1 to May 5

	Italian	Starline
1 - 10	$1.50	$1.80
10 - 25	1.35	1.65
Over 25	1.20	1.50

After May 5

1 - 10	1.50	1.80
10 - 25	1.25	1.55
Over 25	1.00	1.30

Place your order with us and be assured of top quality queens and prompt, courteous service.

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PACKAGES WITH STARLINE QUEENS:

Quantity	1-24	25-99	100 up
2 lb.	$4.80	$4.55	$4.30
3 lb.	5.75	5.50	5.25
4 lb.	7.00	6.75	6.50
EXTRA STARLINE QUEENS:	1.75	1.65	1.55

PACKAGES WITH ITALIAN QUEENS:

Quantity	1-24	25-99	100 up
2 lb.	$4.50	$4.25	$4.00
3 lb.	5.50	5.25	5.00
4 lb.	6.75	6.50	6.25
EXTRA ITALIAN QUEENS:	1.45	1.35	1.25

Queenless packages — deduct $1.25
Queens clipped 10c — Clip and mark 15c

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All Grades - Top Prices.
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SELECT ITALIANS
Package Beees
Queens
Write For Price
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SKYLINE 3-5148 BOX 517 DAVIS, CALIF.

—Crop and Market—

by M. G. Dadant

This month reporters were asked about sales, prices wintering, and increase. Beginning in the Northeast, sales are reported as active, especially for this time of year. Prices for white honey vary from a high of 15c to a low of 13c, with amber from 16c to 12c. Most of the larger producers have sold out or only have honey on hand they have bought elsewhere. Winter was hard, some areas with cold and little snow with many bees dead on bottom boards; very little flight since November. In the south of the area good cleansing flights are reported. Very little planned increase in this area.

In the Southeast, there is considerable variation with sales given as "very good," "good," "normal," "fair," "slow." Prices vary from 15c to 11c, with 12c as average. Importantly, there is very little honey left in producers' hands. Not much of a winter problem in this area as bees have had frequent flights; an ideal winter for bees. Some producers are planning on moderate increase but most are just holding even, with some bees offered for sale.

Reporters in Mississippi, Louisiana, Oklahoma and Arkansas say honey is moving better than a year ago, yet one Oklahoma report says "slow"; prices same as last year with some ½c to 1c more. Winter colder than usual in Arkansas and in Louisiana and much colder in Oklahoma. Producers in the area do not seem inclined to make any increase under present conditions. Texas says honey is moving well with prices from 13c delivered for light to 10c for amber.

In the Southwest, honey sales also are good with prices about the same as above. Bees now on the wing and bringing in pollen so winter is over. Some increase being planned.

In the Northwest, covering California, Oregon, Washington, Montana, Wyoming, Utah, and Colorado the market is given as very good, normal, steady, fair, slow. Prices for light honey 13c to 10½c, with an average of 12c; amber grades 9½c to 8c. Winter open and warm but dry; rain recently. Little wintering done any more in parts of Montana. In the Intermountain area the winter was cold but not severe and bees wintered well. In most of the area moisture is short. Planned increase from "no" to "considerable" or "some." One reporter says there will be some reduction.

In the North Central States, including South Dakota, Minnesota, Michigan, and Wisconsin, the jobbing demand for honey is improving with prices average 12½c to 12c for light honey and 11 to 10 for amber. Prolonged cold winter weather is reported for most of the area with light to heavy loss, with no flight for ten weeks or more; not much increase planned.

Iowa, Illinois, Ohio, Missouri, Kansas, and Nebraska, cold weather with one or two to more flights which should not be exceptional so bees should come out of winter in fair condition. Yet Kansas expects a larger winter loss than usual. As for increase there may be some, but quite a few bees are changing hands. Some are going out of business.

Canadian reports give a steady market, with some slow improvement and stocks dwindling rapidly; prices for white honey from 18c - 15c; one report of 20c; amber about 16c. Prolonged cold in some of the area but normal wintering for the most part; no increase to slight increase.

Honey Wanted—Cars and less than car. Top Prices.
C. W. Aeppler Co., Oconomowoc, Wis.

Big Bear Is Now a Rug

Earl C. Walker, China Lake, California sends two clippings about North Hollywood beekeeper, Walter Terzenbach who was charged by a 350-pound bear in Piru Canyon near Fillmore. Terzenbach had a case of shattered nerves but bruin was killed by another beekeeper and expert archer, Bob Buchanan. Buchanan's arrow leveled the bear as he reared back to take a second blow at the downed man. The bear had been raiding Buchanan's bees. Over the weekend Terzenback wounded the animal with a rifle shot. The next morning the two friends started out to find the bear. They did find him and he charged. The bear is now a rug.

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Each with a young Laying Queen

Lots of	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1 to 11 Each	$4.25	$5.35	$6.45	$7.55
12 to 20 Each	4.05	5.10	6.15	7.20
30 or More Each	3.85	4.85	5.85	6.80

Tested Queens—$2.00

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Shipped anywhere in United States and Canada

1959 PRICES — FOB Hampton, South Carolina

	Queens (each)	2 lb. & Queen	3 lb. & Queen	4 lb. & Queen	5 lb. & Queen
1 - 24 Packages	$1.40	$4.25	$5.25	$6.25	$7.25
25 - 99 Packages	1.30	4.00	5.00	6.00	7.00
100 up Packages	1.20	3.75	4.75	5.75	6.75

(For Queenless Package deduct $1.10

Queens clipped and painted if desired
Health Certificate with each shipment.

Guaranteed safe arrival.

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TERMS: One third with order, balance 15 days before shipment.

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NOTICE: Early Queens Limited to period March 20th - April 5th, (BEFORE PACKAGE SHIPPING TIME) depending on Weather.

	QUEENS		Package Bees with Queens		
	Starlines	Italians	2 lbs.	3 lbs.	4 lbs.
1 - 24	$1.70	$1.30	$4.05	$5.05	$6.05
24 - 99	$1.60	1.25	3.95	4.95	5.95
100 up	1.50	1.20	3.85	4.85	5.85

For packages with Dadant Starline Hybrid queens add 30c extra per pkg. Queens clipped or painted at 5c each.

GARON BEE COMPANY **Donaldsonville, La.**

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Italian Queens and Packages Now

Prices	Extra Queens	2 lb. w/q	3 lb. w/q
1 to 11	$1.40	$4.50	$5.50
12 to 49	1.30	4.25	5.25
50 to 199	1.25	4.00	5.00
200 and up	1.25	3.75	4.75

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Quality and Service Book NOW

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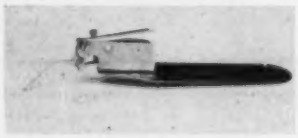

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35 years experience **S. J. HEAD** **Crossett, Arkansas**

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PACKAGE BEES	1 - 24	25 - 49	50 & up
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3 lb. with queen	5.10	4.85	4.75
3 lb. with 2 queens	6.35	6.10	6.00

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Truck orders a specialty — Write for details

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		1 - 9	10 - 49	
	2 lb. w/q	$3.60	$3.40	Parcel
Express	3 lb. w/q	4.80	4.60	Post
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Small orders cash. Large orders $1.00 deposit per package
HONEY BOWL APIARIES **Box 574** **Bunkie, La.**

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30 years experience

2 lb. pkg. w/q	$3.50
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Queens	1.00

Prompt service. No disease.

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Caucasian or Italian Bees & Queens

	2 lb. w/q	3 lb. w/q	4 lb. w/q	5 lb. w/q	Queens
1 - 49	$4.00	$5.00	$6.00	$7.00	$1.25
50 - up	3.75	4.75	5.75	6.75	1.15

All queens postpaid, airmail. Health certificate and live arrival guaranteed.
HOLDER HOMAN
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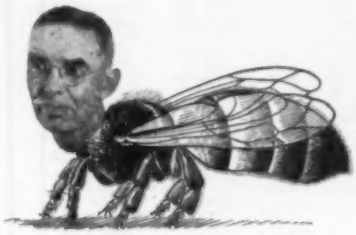

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	Queens	2 lb. w/q	3 lb. w/q
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24 - 99	1.20	4.00	5.00
100 and up	1.15	3.75	4.75

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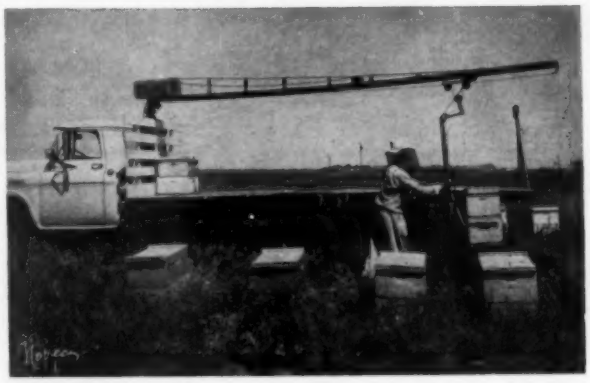

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Extra Queens	1.50	1.40	1.30

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OUR SPECIALITY
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High Quality Italian
Queens and Package Bees for 1959

	Queens	2 lb. w/q.	3 lb. w/q.
1 - 29	$1.25	$4.00	$5.00
30 & up	1.15	3.75	4.75

Please let us have your requirements early. This will help us to supply you bees on your desired shipping dates. Thank you!

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Superior California Italian
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25 - 49	3.85	4.85
50 & up	3.75	4.75

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2 lbs. with queen.....$3.75
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Extra queens.....$1.20
I will try to give you satisfactory service and bees.
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1 - 9 . . $1.25 10 or more . . $1.10
3 Frame Nuclei w/q. $4.50 each
Frames Exchanged
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We still have open dates for April and May shipping of those good Midnite queens. Dadants have spent several years work on this hybrid before it was released for commercial use. For gentle bees and better honey production order now.

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A Dual Strain
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20 YEARS BREEDING
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Singles	$1.50
2 to 24	1.45
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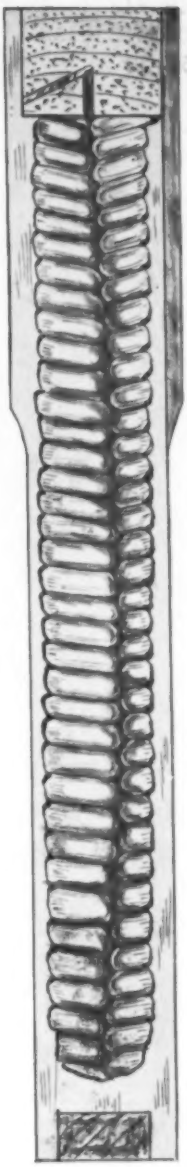
Have you seen combs like this in your apiary?



If you're troubled with combs that warp out of shape, remember 3-ply foundation like plywood stays straight and streng. It doesn't sag, stretch or melt down. 3-ply is the foundation on which big honey crops are built.

Biggest Thing in The Apiary
Three-ply Foundation
Center ply Beeswax Strengthened with minor portion vegetable wax
Outer plies made of pure beeswax
Root
Bee Supplies

To get perfect brood and surplus combs everytime, visit the dealer who displays this trademark — your standard of quality supplies.

Root QUALITY BEE SUPPLIES

THE A. I. ROOT CO.

Factories at Medina, Ohio — Council Bluffs, Iowa — San Antonio, Texas

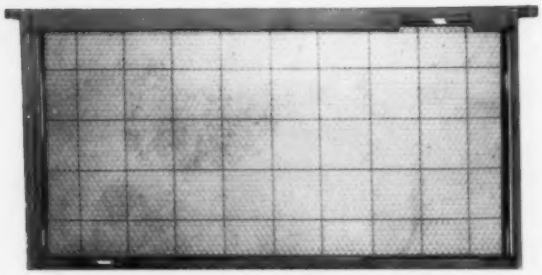
Distributors in Principal Cities

DEALERS EVERYWHERE

UNIVERSITY MICROFILMS
313 NORTH FIRST STREET
ANN ARBOR MICHIGAN
DEC 57-58-59

It Sure Figures!

DADANT'S NAILLESS TOPBAR FRAMES and GILT-4-EDGE FOUNDATION SAVES TIME



Average Time for Nailing 100 Ordinary Frames, Wiring, Inserting Foundation and Embedding ..... **10 HOURS**

Average Time for Completely Assembling 100 Dadant Nailless Topbar Frames and Gilt-4-Edge Foundation ..... **2 HOURS**

Time Saved 8 HOURS

The Eight Hours Saved per each Hundred Frames can be utilized to do the many other jobs you as a producer have every season.

Save your TIME by contacting the nearest DADANT DEALER, or any of our seven distribution points, and get the Facts and Figures!

If interested in a good Portable Adding Machine, write us!

DADANT'S COMB FOUNDATIONS ARE ALWAYS MADE FROM PURE BEESWAX

DADANT & SONS, Inc., Hamilton, Illinois

BRANCHES:

1929 E. FOURTH ST.
SIOUX CITY, IOWA

722 W. O'CONNELL ST.
WATERTOWN, WISCONSIN

HIGHWAY 41, SOUTH
HAHIRA, GEORGIA

180-200 CANISTEO
HORNELL, NEW YORK

1010 W. AUSTIN
PARIS, TEXAS

STEPHENSON AVE. AT 14TH
LYNCHBURG, VIRGINIA